I 53.59/2:
B 53/DECISION

FINDING OF NO SIGNIFICANT IMPACT, DECISION
RECORD, AND ENVIRONMENTAL ASSESSMENT FOR THE
PROPOSED BIRD CANYON.... U.S. DEPARTMENT OF
THE INTERIOR... JULY 2003

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U.S. Department of the Interior
Bureau of Land Management
Wyoming State Office

Kemmerer Field Office, Rock Springs Field Office July 2003

FINDING OF NO SIGNIFICANT IMPACT, DECISION RECORD, and ENVIRONMENTAL ASSESSMENT for the Proposed Bird Canyon to Opal 24-Inch Natural Gas Pipeline

Sublette, Sweetwater, and Lincoln Counties, Wyoming

C

MISSION STATEMENT

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/WY/PL-03/023+1310

WYW-090-EA03-059

I

MARCH 3 1849

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Rock Springs Field Office
280 Highway 191 North
Rock Springs, Wyoming 82901-3447

WY-090-EA03-059
JGGC Bird Canyon to Opal
24-Inch Natural Gas Pipeline

July 23 2003

Dear Reader:

This Environmental Assessment, Decision Record and Finding of No Significant Impacts (FONSI) on the proposed Jonah Gas Gathering Company's Proposed Bird Canyon to Opal 24-Inch Natural Gas Pipeline Project is furnished for your information. The decision on this project was based upon the analysis in the Environmental Assessment, public concerns and comments, and other multiple-use resource objectives or programs that apply to the project.

If you have any questions or concerns about this decision, please contact Kelly Lamborn at (307) 828-4505 or send your comments to:

Kelly Lamborn
NEPA Project Lead
Bureau of Land Management
312 Highway 189 North
Kemmerer, WY 83101

Sincerely,

Acting Field Manager

3 Attachments:
- 1-Environmental Assessment
- 2-FONSI
- 3-Decision Record

FINDING OF NO SIGNIFICANT IMPACT
JONAH GAS GATHERING COMPANY
BIRD CANYON TO OPAL 24-INCH
NATURAL GAS PIPELINE PROJECT

Based on my review of the analysis of the Bird Canyon to Opal 24-inch Natural Gas Pipeline Project Environmental Assessment (EA) (July 2003), I have determined that the proposed action is in conformance with the approved land use plans and will not have any significant impacts on the human environment. Therefore, an environmental impact statement is not required. Further explanation of the finding is provided below.

The EA shows that adverse impacts to surface ownership/use and grazing; livestock management; socioeconomics/environmental justice; cultural resources; paleontology; soils/watersheds; water resources; air quality/noise; vegetation/riparian areas; wildlife and fisheries; threatened, endangered, candidate and special status species; visual resources; and from the use of hazardous materials would all be minor, short term, necessary and due impacts. Potentially substantial positive economic impacts could result for the companies, and local, state and federal governments.

The Kemmerer Resource Management Plan and the Green River Resource Area Management Plan provide for the use of these lands for oil and natural gas development. The Proposed Action would be in conformance with these land use plans, and amendments to the plans would not be necessary to implement the Proposed Action.

Approval:

Fred H. Murphy
Acting Field Manager, Rock Springs Field Office

7-23-03
Date

DECISION RECORD

FOR

JONAH GAS GATHERING COMPANY

BIRD CANYON TO OPAL 24-INCH
NATURAL GAS PIPELINE PROJECT

SUBLETTE, SWEETWATER, AND
LINCOLN COUNTIES, WYOMING

WYW-156815

EA NUMBER WY-090-EA03-059

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SUMMARY OF THE DEVELOPMENT PROPOSAL

Jonah Gas Gathering Company (JGGC) is proposing to construct a 24-inch natural gas pipeline and related facilities (including valves, metering equipment and compressors) to transport natural gas produced from the Jonah and Pinedale Anticline fields for delivery to multiple markets. The proposed pipeline would begin at the Jonah Gas Hub and parallel the existing JGGC Bird Canyon and Opal Loop pipelines; and the FMC pipeline through the Green River crossing and south of Wyoming State Road (WSR) 372, where it will revert back to the Bird Canyon and Opal Loop pipelines to the JGGC Pioneer Plant.

The proposed new pipeline would stay to the west and north of the existing pipelines at a minimum distance of 25 feet from the centerline of the closest pipeline. The pipeline route would require a crossing of the Green River. JGGC will bore under the Green River to minimize environmental impact. JGGC proposes two scenarios to complete the bore, both of which would limit disturbance to the previously disturbed 50-foot right-of-way. Both procedures would avoid additional disturbance outside the previously disturbed right-of-way on the north side of the river.

The compression facility would be co-located with the existing Bird Canyon Compressor Station at the Jonah Gas Hub, located in NENW, section 34, Township 27 North, Range 111 West, in Sublette County, Wyoming. The compressor site would consist of either four (4) 3,000 horsepower engine-driven reciprocating compressor units, or two (2) turbine driven centrifugal compressor units (12,000 total horsepower). The new compression would be sited within the existing Bird Canyon Compressor Station site.

JGGC's Proposed Action incorporated several measures to reduce or avoid impacts to the environment.

DECISION

It is the decision of the Rock Springs Field Manager to approve Jonah Gas Gathering Company's proposed project as described under the proposed action. Approval allows the authorization of necessary permits and right-of-way on public lands administered by the BLM to JGGC to implement this project.

Approval is conditioned upon and subject to the following requirements:

- JGGC will implement the operator committed resource protection measures described in Section 2.1; and the mitigation identified in sections 4.1.3, 4.3.3, 4.5.3, 4.7.3, 4.8.3, 4.10.3,4.11.3, and 4.13.3 of the EA. Monitoring inspections conducted by BLM and JGGC will be based upon these requirements which will be applied to all surface disturbing activities. BLM will conduct monitoring inspections of construction and rehabilitation operations through a compliance officer and/or inter-disciplinary team to ensure that these measures are effectively implemented.

ALTERNATIVES CONSIDERED INCLUDING THE PROPOSED ACTION

Two alternatives (proposed action and no action) were considered and analyzed in detail.

Proposed action – The proposed development would involve constructing a 24-inch natural gas pipeline, beginning at the Bird Canyon Compressor Station in the NENW, section 34, Township 27 North, Range 111 West and terminating at the JGGC Pioneer Plant located in the SE, section 22, Township 21 North, Range 114 West, for a total of 48.8 miles; and adding additional compression at the Bird Canyon Compressor Station. A total of 473.21 acres will be disturbed.

No action – The no action alternative was analyzed in detail. Under the no action alternative, none of the proposed action would be constructed. No ground would be disturbed, and no impacts to the existing physical or biological environment would take place. Current land and resource uses would continue. Economic return to the operators, and Federal and Local governments would be delayed, and a hardship would be placed on the operator's ability to process produced gas and relay that gas to market.

MANAGEMENT CONSIDERATIONS/RATIONALE FOR DECISION

The decision to approve JGGC's proposed development is based on the following factors: 1) consistency with land use plans and RMPs; 2) relevant resource and economic considerations; 3) agency statutory requirements; 4) national policy; 5) measures to avoid or minimize environmental harm; 6) finding of no significant impact; and 7) public comments.

1) **Consistency with Land Use and Resource Management Plans (RMP).** The decision to approve JGGC's proposal is in conformance with the overall planning direction for the area. The Kemmerer and Green River Resource Management Plans state that public land in the area of the proposal is open to consideration for exploration, leasing, and development for all leasable minerals. Standard and special protective measures were identified and incorporated into the Proposed Action to reduce or eliminate adverse impacts.

2) **Relevant Resource and Economic Considerations.** Environmental impacts identified in the EA are not considered significant when the identified mitigation measures are applied. The economic benefit of allowing the project is important, especially to the owners of the natural gas, the pipeline companies, and to a lessor extent, local, state, and federal governments.

3) **Agency Statutory Requirements.** All pertinent statutory requirements applicable to this proposal were considered. These include consultation with U.S. Fish and Wildlife Service regarding threatened and endangered species; consultation with the Corps of Engineers; and coordination with the State of Wyoming regarding wildlife, cultural resources, environmental quality, and oil and gas conservation.

4) **National Policy.** Private exploration and development of federal oil and gas leases is an integral part of the BLM oil and gas leasing program under authority of the *Mineral Leasing Act of 1920* and the *Federal Land Policy and Management Act of 1976*. The United States continues to rely heavily on foreign energy sources. Oil and gas leasing is needed to encourage development of domestic oil and gas reserves to reduce the United States' dependence on foreign energy supplies. Therefore, the decision is consistent with national policy.

5) **Measures to Avoid or Minimize Environmental Harm.** The adoption of the mitigation measures identified in the EA represent practicable means to avoid or minimize environmental harm.

6) **Finding of No Significant Impact.** As discussed in the EA, the direct and indirect incremental change to the environment introduced by implementation of the project on affected resources would be minimal. The adverse impacts have been mitigated such that the net change in cumulative impacts introduced by the project - in combination with past, present, and reasonably foreseeable actions - are expected to be insignificant. The EA concludes that the Proposed Action will not result in impacts that exceed the significance criteria defined for each resource and that with the mitigation measures described in the EA and contained in this decision, the Proposed Action will not have any significant impacts on the human environment. Therefore, an environmental impact statement is not required.

7) **Public Comments.** Seven comment letters were received during the scoping period that ended April 7, 2003: 1) Office of Federal Land Policy, State of Wyoming; 2) United States Environmental Protection Agency; 3) Seedskadee National Wildlife Refuge, United States Fish and Wildlife Service (USFWS); 4) The Shoshone-Bannock Tribes; 5) Ecological Services, USFWS; 6) Petroleum Association of Wyoming; 7) National Trails System Office, National Park Service Their summarized comments and BLM's responses are in Appendix A.

The decision to approve JGGC's project proposal takes into account important management considerations, Federal Agency missions, and the public's need for oil and gas. The decision balances these considerations with the degree of adverse impact to the natural and physical environment. The development effort will help meet public needs for oil and gas while at the same time allowing humans to coexist with nature in a way that allows the least degree of irreversible, irretrievable commitment of resources. The long-term productivity of the area would neither be lost nor substantially reduced as a result of approving JGGC's proposal.

COMPLIANCE AND MONITORING

JGGC and BLM will provide qualified representatives on the ground during and following construction to validate construction, reclamation, other approved design, and compliance commensurate with provisions of this Decision Record. JGGC will be required to conduct monitoring of the project in cooperation with BLM. JGGC will monitor its reclamation to ensure that revegetation meets the accepted standards. Appropriate remedial action will be taken by JGGC in the event unacceptable impacts are identified.

APPEAL

This decision is subject to appeal as detailed below.

INFORMATION ON TAKING APPEALS TO THE BOARD OF LAND APPEALS FOLLOWS:

DO NOT APPEAL UNLESS

1. This decision is adverse to you.

AND

2. You believe it is incorrect.

IF YOU APPEAL, THE FOLLOWING PROCEDURES MUST BE FOLLOWED:

1.	NOTICE OF APPEAL	Within 30 days of the receipt of this decision, file a Notice of Appeal in the office which issued this decision (see 43 CFR 4.411 and 4.413). You may state your reasons for appealing, if you desire.
2.	WHERE TO FILE NOTICE OF APPEAL	Field Manager, Kemmerer Field Office 312 Highway 189 North Kemmerer, Wyoming 83101
	ALSO SEND COPY TO SOLICITOR	Office of the Regional Solicitor Rocky Mountain Region 755 Parfet Street, Suite 151 Lakewood, Colorado 80215
3.	STATEMENT OF REASONS	Within 30 days after filing the Notice of Appeal, file a complete statement of the reasons why you are appealing. This must be filed with the United States Department of the Interior, Office of the Secretary, Board of Land Appeals, 4015 Wilson Boulevard, Arlington, Virginia 22203 (see 43 CFR 4.412 and 4.413). If you fully stated your reasons for appealing when filing the Notice of Appeal, no additional statement is necessary.

ALSO SEND COPY TO SOLICITOR

Office of the Regional Solicitor
Rocky Mountain Region
755 Parfet Street, Suite 151
Lakewood, Colorado 80215

4. ADVERSE PARTIES

Within 15 days after each document is filed, each adverse party named in the decision and the Regional Solicitor or Field Solicitor having jurisdiction over the State in which the appeal arose must be served with a copy of: (a) the Notice of Appeal, (b) the Statement of Reasons, and (c) any other documents filed (see 43 CFR 4.413). Service will be made upon the Associate Solicitor, Division of Energy and Resources, Washington D.C. 20240, instead of the Field or Regional Solicitor when appeals are taken from decisions of the Director (WO-100).

5. PROOF OF SERVICE

Within 15 days after any document is served on an adverse party, file proof of that service with the United States Department of the Interior, Office of the Secretary, Board of Land Appeals, 4015 Wilson Boulevard, Arlington, Virginia 22203. This may consist of a certified or registered mail "Return Receipt Card" signed by the adverse party (see 43 CFR 3.301(c)(2)).

UNLESS THESE PROCEDURES ARE FOLLOWED, YOUR APPEAL WILL BE SUBJECT TO DISMISSAL (SEE 43 CFR 4.402). BE CERTAIN THAT ALL COMMUNICATIONS ARE IDENTIFIED BY SERIAL NUMBER OF THE CASE BEING APPEALED (WYW-155875/WYW-155876).

SUBPART 1821.2—OFFICE HOURS;TIME AND PLACE FOR FILING

Sec. 1821.2-1 Office Hours of State Office

(a) State Offices and the Washington Office of the Bureau of Land Management are open to the public for the filing of documents and inspection of records during the hours specified in this paragraph on Monday through Friday of each week, with the exception of those days where the office may be closed because of a national holiday or Presidential or other administrative order. The hours during which the State Offices and the Washington Office are open to the public for inspection of records are from 10 a.m. to 4 p.m., standard time or daylight saving time, whichever is in effect at the city in which each office is located.

Sec. 18212-2(d) Any document required or permitted to be filed under the regulations of this chapter, which is received in the State Office or the Washington Office, either in the mail or by personal delivery when the office is not open to the public shall be deemed to be filed as of the day and hour the office opens to the public.

Sec. 1821-2.2(e) Any document required by law, regulation, or decision to be filed within a stated period, the last day of which falls on a day the State Office or the Washington Office is officially closed, shall be deemed to be timely filed if it is received in the appropriate office on the next day the office is open to the public.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards.

1. The relative harm to the parties if the stay is granted or denied.
2. The likelihood of the appellant's success on the merits.
3. The likelihood of immediate and irreparable harm if the stay is not granted.
4. Whether the public interest favors granting the stay.

SIGNATURE

Acting Field Manager, Rock Springs Field Office

7-23-03
Date

APPENDIX A

SUMMARY OF COMMENTS AND BLM'S RESPONSE TO THE SCOPING NOTICE FOR JONAH GAS GATHERING COMPANY'S BIRD CANYON TO OPAL 24-INCH NATURAL GAS PIPELINE PROJECT

Seven comment letters were received during the scoping period that ended April 7, 2003: 1) Office of Federal Land Policy, State of Wyoming; 2) United States Environmental Protection Agency; 3) Seedskadee National Wildlife Refuge, United States Fish and Wildlife Service (USFWS); 4) The Shoshone-Bannock Tribes; 5) Ecological Services, USFWS; 6) Petroleum Association of Wyoming; 7) National Trails System Office, National Park Service.

Office of Federal Land Policy, State of Wyoming

They forwarded letters from the Wyoming Department of Agriculture and Wyoming Game and Fish Department.

Wyoming Department of Agriculture

Requested that BLM Officials continue to work with all grazing permittees and agriculture producers affected by this project to learn of their concerns and recommendations about the proposed policies and actions regarding this project.

Wyoming Game and Fish Department

Expressed concern that the environmental assessment address adequate reclamation of the pipeline corridor and specifically addressed concern over the crossing of the Green River.

In preparing the Environmental Assessment we have identified all users that would be affected by this action that are authorized through BLM permits. The project will be monitored by BLM and JGGC to ensure that grazing permittees are notified when the construction will be within their area of use. Ramps for the use of livestock, wild horses, and other wildlife have been incorporated into the plan of development to provide escape in the event that something does fall into the trench.

Reclamation is a very important concern to the BLM and a reclamation plan has been incorporated into the plan of development for this project. The Green River will be bored so as to minimize the effects to sensitive native fish species that occur in the Green River drainage.

United States Environmental Protection Agency (EPA)

The EPA's main concerns relate to (1) potential impacts to wetlands and other waters of the United States and sedimentation of those waters from crossings of wetlands and water bodies; (2) potential impacts to riparian and other sensitive wildlife habitats and soils; (3) potential direct fish and wildlife impacts, particularly to sensitive wildlife species such as *sage grouse, wild horses, and other special status species that may be identified; (4) the potential for the establishment and spread of noxious weeds and related impacts to soils and habitats; (5) the cumulative impacts associated with natural gas development projects that will be served by the proposed pipeline; and (6) the social and economic impacts to local and regional communities and the potential impacts to local and regional natural gas prices for consumers.*

These concerns were also the BLM's concerns when preparing the environmental analysis and plan of development for the project. Boring of the Green River will greatly contribute in protecting wetlands and other waters of the United States as well as protecting sensitive native fish species that occur in that drainage. Weeds have been addressed as well as related impacts to soils and habitats. The location of the project has been designed to parallel existing pipelines through the area, so to avoid fragmentation and to consolidate the disturbance along a specific route. Cumulative impacts have been addressed as well as social and economic impacts that can occur as a result of approving the project, as well as those that can occur from not approving the project.

Seedskadee National Wildlife Refuge, United States Fish and Wildlife Service

The Seedskadee National Wildlife Refuge expressed concern regarding roads that are being used in the vicinity of the refuge, and the lack of success on certain segments of the existing pipelines. They also wanted to ensure that wildlife issues were going to be addressed in the environmental analysis.

The resource concerns have been forwarded to the Rock Springs Field Office. We have received concurrence from the Ecological Services, United States Fish and Wildlife Service that the appropriate surveys have been conducted for this project. They have concurred with the "may affect, not likely to adversely affect" determination made by the Bureau of Land Management for this project.

The Shoshone-Bannock Tribes

The Shoshone-Bannock Heritage Tribal Office had questions regarding the termination point, and recommended that an archaeological survey be done within the areas of the river.

The project will begin at the Bird Canyon Compression Station and terminate at the Pioneer Plant site near Opal, Wyoming. This is explained in the environmental assessment. The entire route has been inventoried and concurrence has been received from the Wyoming State Historical Protection Office.

Ecological Service, United States Fish and Wildlife Service (Service)

In accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (50 CFR § 402.13) of the4 Act, they provided a list of threatened or endangered species, or species proposed for listing under the Act that my be present in the project area.

This list was used to determine what surveys were required for the proposal. Results of the surveys and mitigation that will be applied has been supplied to the Service to complete section 7 consultation. We have received concurrence of determinations made by the Bureau of Land Management for this project.

//

Petroleum Association Of Wyoming

The Petroleum Association of Wyoming (PAW) supports the proposal.

Thank you for your comments.

National Trails System Office, National Park Service

The National Park Service has identified several branches of the Greenwood-Sublette Branch of the Oregon-California Trail, and expressed concern about the potential adverse impacts this proposal would have on historic trail resources.

The project has been designed to parallel existing pipelines the entire route. The proposed action has been modified near trail crossings to limit the new disturbance to preserve the topography and vegetation. In certain areas the work areas have been reduced at least in half to add additional protection for cultural resources. We have received concurrence from the Wyoming State Historic Preservation Office with the finding of not adverse when the criteria of adverse effect has been applied to this undertaking.

ENVIRONMENTAL ASSESSMENT

JONAH GAS GATHERING COMPANY PROPOSED BIRD CANYON TO OPAL 24-INCH NATURAL GAS PIPELINE PROJECT

Prepared for
Bureau of Land Management
Kemmerer Field Office
Kemmerer, Wyoming

and

Bureau of Land Management
Rock Springs Field Office
Rock Springs, Wyoming

and

Bureau of Reclamation
Provo, Utah

This Environmental Analysis was prepared by *Gary Holsan Environmental Planning*, an environmental consulting firm, with the guidance, participation, and independent evaluation of the Bureau of Land Management (BLM). The BLM, in accordance with Federal regulation 40 CFR 1506.5(a) and (b), is in agreement with the findings of the analysis and approves and takes responsibility for the scope and content of this document.

July 2003

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CHAPTER 1

PURPOSE AND NEED

CHAPTER 1

PURPOSE AND NEED

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION AND LOCATION

1.1.1 Description

Jonah Gas Gathering Company (JGGC) is proposing to construct a buried natural gas pipeline and related facilities to transport natural gas produced from the Jonah and Pinedale Anticline fields for delivery to multiple markets. The capacity of existing pipelines in the area is insufficient to adequately transport anticipated natural gas supplies.

JGGC proposes to construct a pipeline with related facilities (including additional compression, valves, metering equipment, and liquids separators) from a compressor site, the existing Bird Canyon Compressor Station, to the JGGC Pioneer Natural Gas Processing Plant near Opal, Wyoming (Figure 1-1). The Bird to Opal Pipeline would pass through southern Sublette, northwestern Sweetwater, and eastern Lincoln counties (Figure 1-1 and Appendix A).

1.2 PURPOSE OF AND NEED FOR ACTION

Exploration and development of federal oil and gas leases by private industry, including transport and delivery of produced oil/gas, is an integral part of the BLM's oil and gas program under authority of the Mineral Leasing Act of 1920 as amended, the Mining and Minerals Policy Act of 1970, the Federal Land Policy and Management Act of 1976, the National Materials and Minerals Policy, Research and Development Act of 1980, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987.

The BLM oil and gas program encourages development of domestic oil and gas reserves. Natural gas is an integral part of the United States' energy future due to its availability and the presence of the existing market delivery infrastructure. By developing domestic reserves of clean burning natural gas, the U.S. would reduce dependence on foreign energy, such as natural gas from Mexico and Canada. The environmental advantages of burning natural gas rather than oil or coal were emphasized by the U.S. Congress and by the President when the Clean Air Act Amendments of 1990 were signed into law.

The National Petroleum Council (NPC) was formed in 1946 to advise, inform and make recommendations to the Secretary of Energy on any matter requested by the Secretary relating to oil and natural gas and the oil and natural gas industries. In December 1999, the NPC issued a report titled *Natural Gas: Meeting the Challenges of the Nation's Growing Natural Gas Demand* (National Petroleum Council 1999). The report projects that U.S. natural gas consumption will increase 32 percent between 1998 and 2010. This would constitute a 7 trillion cubic feet (TCF) increase, from the 1998 level of 22 TCF to 29 TCF in 2010. Much of the incremental demand is projected for use in the generation of electricity.

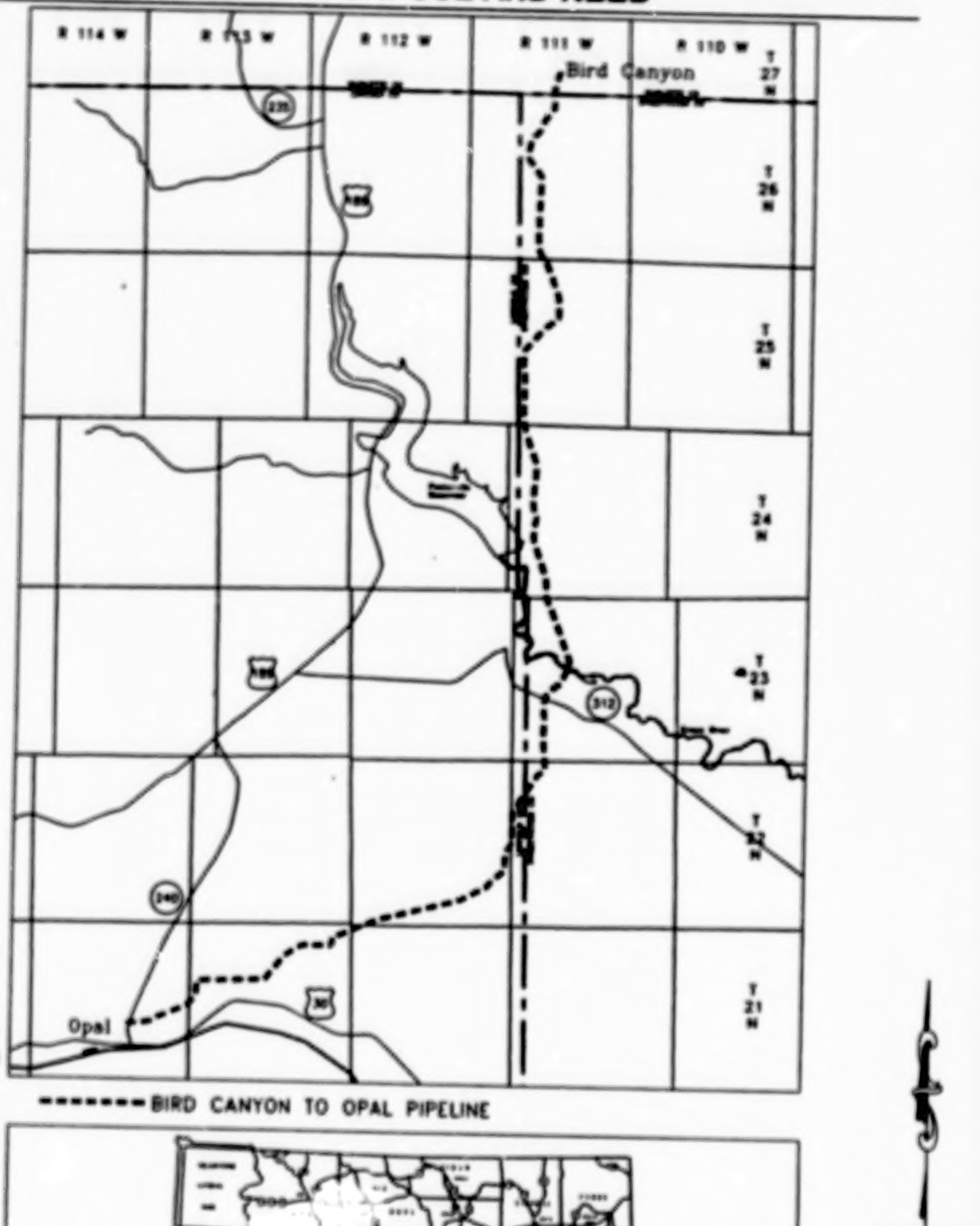

Figure 1-1. General Location Map, Bird to Opal Natural Gas Pipeline.

To meet this growing demand, the report projects that U.S. domestic gas production would increase from the 1998 level of 19 TCF to 25 TCF in 2010. The remaining demand will be met by imports of foreign natural gas, primarily from Canada. About 14 percent of this increase in domestic supply is anticipated to come from the Rocky Mountain region. Natural Gas production delivered by the Bird to Opal pipeline could help meet this demand.

The purpose of the project would be to allow JGGC to gather natural gas produced from the Jonah and Pinedale Anticline Fields, deliver to multiple markets, and provide for the sale of developed federal minerals.

1.3 PURPOSE OF THE ENVIRONMENTAL ANALYSIS PROCESS

The BLM, Kemmerer Field Office, Kemmerer, Wyoming, is the lead agency responsible for preparation of this EA, with resource input and involvement from the BLM, Rock Springs Field Office. The Bureau of Reclamation (BOR), which administers some lands on the proposed pipeline corridor, is a cooperating agency.

The evaluation of this proposal and alternatives was developed through interdisciplinary field review with representatives from JGGC, the BLM, and the project interdisciplinary team (IDT). In addition, for purposes of this EA, reference to JGGC, as the project proponent, includes all contractors, subcontractors or other parties that would be involved in the design, layout, and operation of the proposed Bird to Opal Pipeline.

The BLM, as authorized by the Council for Environmental Quality (CEQ) and the National Environmental Policy Act (NEPA) directives, analyzes actions involving federal lands to determine their impact on the human environment (40 CFR, Parts 1500-1508). Prior to issuing decisions on the JGCC proposal, the BLM must comply with the requirements of NEPA. NEPA requires Federal agencies to use a systematic, interdisciplinary approach to ensure the integrated use of natural and social sciences in planning and decision making. NEPA also directs that an environmental analysis of proposed Federal actions must be completed to determine reasonable alternatives and effects of the federal action on the environment. The analysis is to determine whether approval of the proposed action would constitute a "major" federal action significantly affecting the human environment. An interdisciplinary team conducted the evaluation of the proposed action and project alternatives with representatives from the BLM and a third-party contractor approved by and working under the direction of the BLM.

Factors considered during the environmental analysis process regarding the JGGC project include the following:

- A determination of whether the proposal and alternatives are in conformance with BLM policies, regulations, and approved resource management plan direction.
- A determination of whether the proposal and alternatives are in conformance with policies and regulations of other agencies likely associated with the project.

This EA is not a decision document. It documents the process used to analyze the potential impacts of the proposed action and alternatives and discloses the effects of the proposed action and alternatives to that action. A Decision Record (DR) will document the final decision regarding the selected alternative. The BLM will document whether or not significant impacts would occur with implementation of any of the alternatives. If the BLM determines that no significant impacts would occur, a Finding of No Significant Impact (FONSI) Decision Record would be issued. If significant impacts are identified, the BLM decision would be to complete an EIS, with subsequent public input and additional analysis of the alternatives. The BLM decision will relate to BLM administered lands. Decisions by the responsible official regarding the use of transportation networks in the project area by JGGC may affect private landowners, county administration of these roads, and public access to BLM administered lands.

1.4 RELATIONSHIP TO POLICIES, PLANS, AND PROGRAMS

1.4.1 Conformance With Land Use Plan

The proposed pipeline and related facilities are located on lands administered by the Rock Springs and Kemmerer Field Offices. The documents that direct management of BLM administered lands within the project area are the Green River Resource Management Plan (GRRMP)(approved August 8, 1997), and the Kemmerer Resource Management Plan (KRMP)(approved April 29, 1986). The RMPs provide for land use guidance for development of oil and gas reserves, including transmission of products to distribution points by pipelines. The proposed pipeline project is in conformance with the RMPs. The environmental analysis completed for this project will incorporate appropriate decisions, terms, and conditions of use described in the RMP decisions.

1.4.2 Relationship to Other Plans and Documents

The proposed action would comply with all relevant federal, state, and local laws, and the Sublette, Sweetwater, and Lincoln Counties land use plans.

Environmental Assessment and Finding of No Significant Impact for the Opal Loop Natural Gas Pipeline and Compressor Station, Sublette, Sweetwater, and Lincoln Counties, Wyoming - The BLM has prepared an environmental assessment and issued a Finding of No Significant Impact/Decision Record (FONSI/DR, September 16, 2001) for the Opal Loop pipeline route. The FONSI/DR authorized Jonah Gas Gathering Company to construct and operate the proposed Opal Loop Pipeline, subject to conditions of approval provided in the BLM right-of-way grant. Where appropriate, the Bird to Opal Pipeline EA will tier to resource inventories and management direction provided in the Opal Loop EA.

Environmental Assessment and Finding of No Significant Impact for the Bird Canyon-Opal Pipeline, Granger Spur Pipelines, and One Compressor Station, Sublette, Sweetwater, and Lincoln Counties, Wyoming - The BLM has prepared an environmental assessment and issued a Finding of No Significant Impact/Decision Record (FONSI/DR, February 2, 1999) for the Bird Canyon to Opal pipeline route. The FONSI/DR authorized Jonah Gas Gathering Company to construct and operate the proposed Bird Canyon Pipeline, subject to conditions of approval provided in the BLM right-of-way grant. Where appropriate, the Bird to Opal Pipeline EA will tier to resource inventories and management direction provided in the Bird Canyon EA.

1.5 ISSUES AND CONCERNS

Public issues and comments regarding the JGGC Bird to Opal Pipeline proposal were solicited for incorporation into this EA through the scoping process. A Scoping Statement that described the actions to be analyzed was prepared and submitted to the public on February 7, 2003. The statement identified preliminary land and resource management issues, concerns, and opportunities, and outlined timing needs for public involvement. Environmental and social issues of local importance associated with natural gas production were identified as follows:

- Potential impacts to wildlife habitats within the project area, including big game, sage grouse, and raptors.
- Increased traffic and associated impacts on existing Federal, County, State, and BLM roads.
- Social and economic impacts to local communities.
- Impacts to surface and groundwater resources, including sedimentation/salinity to the Colorado River system.
- Potential impacts to sensitive soils within the project area.
- Potential impacts to wetlands, floodplains, and riparian areas.
- Impacts from emissions resulting from additional construction activities.
- Reclamation of disturbed areas and control of noxious weed invasions.
- Potential conflicts with livestock management operations in the analysis area, including possible impacts to range improvements.
- Potential impacts to cultural and historical values within the analysis area.
- Potential impact to listed, or proposed for listing, threatened and endangered plant and animal species, including potential Colorado River depletion and effects of downstream listed fish species.
- Cumulative effects addressing this proposed project and other ongoing or planned energy-related activities near the proposed pipeline.
- Impacts to recreation.
- Impacts to wild horses.
- Visual Resource Management concerns.

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1.6 AUTHORIZING ACTIONS

The proposed federal, state, county, and local actions required to implement the Bird to Opal Pipeline Project are listed in Table 1-1.

Table 1-1. Federal, State, and County Authorizing Actions.

Agency	Nature of Action
DEPARTMENT OF THE INTERIOR	
Bureau of Land Management (Kemmerer and Rock Springs Field Offices	NEPA compliance and approval of ROW applications for pipelines; temporary use permits.
U.S. Fish and Wildlife Service	Review impacts on federally listed or proposed for listing, threatened or endangered species of fish, wildlife, and plants.
DEPARTMENT OF THE ARMY	
U.S. Army Corps of Engineers	Issue permits(s)(Section 404) for placement of dredged or fill material in or excavation of waters of the U.S. and their adjacent wetlands; permit to cross the Green River.
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY	
Water Quality Division	National Pollution Discharge Elimination System (NPDES) permit. Conformance with all surface water standards; permit to construct and permit to operate.
WYOMING STATE ENGINEER'S OFFICE	
	Issue permits to appropriate groundwater and surface water. Issue temporary water rights for construction permits to appropriate surface water.

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Agency	Nature of Action
WYOMING STATE HISTORIC PRESERVATION OFFICE	
	Consultation concerning identification, evaluation, assessments effect and treatment of adverse effects on historic properties.
SUBLETTE/SWEETWATER/LINCOLN COUNTIES	
	Zoning certificates for site development and construction. Small wastewater system permits, where applicable. Road use agreements and/or oversize trip permits when traffic on county roads exceeds established size and weight limits or where the potential for excessive road damage exists. Construction and conditional use permits for all new structures. Zoning changes where applicable. Control of noxious weeds. Permits to bore or trench county roads or for any crossing or access off a county road.
WYOMING DEPARTMENT OF TRANSPORTATION	
	Conformance with applicable size and weight limits for trucks.

CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

2.0 SUMMARY

Jonah Gas Gathering Company (JGGC) proposes to construct a 24-inch dehydrated natural gas pipeline and related facilities (including valves, compression, metering equipment, and liquids separation equipment). The proposed pipeline would begin at the Bird Canyon Compressor Station in the NENW, Section 34, Township 27 North, Range 111 West (see Figure 1-1 and Appendix A) and terminate at the JGGC Pioneer Plant located in the SE/4 of Section 22, Township 21 North, and Range 114 West. JGGC currently owns and operates two 20-inch pipelines (Bird Canyon and Opal Loop Pipelines) along the same general route. The pipeline would run parallel to the existing Jonah Gas pipeline route from Bird Canyon Compressor Station to a point in the NW/4 of Section 15 T25N-R111W where it would run in a southwesterly direction to a point in the NW/4 of Section 21, T25N-R111W. At that point, it would parallel the FMC pipeline through the Green River crossing and south of Wyoming State Road (WSR) 372 to the NW/4 of Section 5, T22N-R111W. From that point to the JGGC Pioneer Plant, the pipeline would parallel the existing Jonah Gas Gathering pipelines. The proposed 24-inch pipeline is approximately 257,490 feet (48.8 miles) in total length; approximately 205,348 feet (38.9 miles, 79.7%) is located on federal land, approximately 9,267 feet (1.8 miles, 3.6%) on state land, and approximately 42,875 feet (8.1 miles, 16.7%) on private land. Approximately 40,456 feet (7.7 miles, 15.7% of total) of pipeline proposed on federal land is under the administrative jurisdiction of the Bureau of Reclamation.

The proposed new pipeline would stay to the west and north of the existing pipelines at a minimum distance of 25 feet from the centerline of the existing pipeline. The pipeline route would require a crossing of the Green River. JGGC is proposing to horizontally bore under the Green River to minimize environmental impact. JGGC proposes two scenarios to complete the bore, both of which would limit disturbance to the previously disturbed 50-foot right of way. First, establishing the bore pit on the north side within the abandoned 50 foot right of way, limiting all construction within the 50-foot right of way corridor, welding the pipe on the south side and pulling back through. Second option, boring from the south side of the river, welding up the pipe on the south side of the river, and moving equipment over to the north side of the river to pull the pipe through, limiting all construction within the 50 foot right of way corridor on the north side. Both procedures would avoid additional disturbance outside the previously disturbed right of way on the north side of the river.

The pipeline would be buried at least 3.5 feet deep, except at road crossings where the depth would be 6.0 feet. An 80-foot wide construction corridor is proposed by JGGC. Upon completion of the project, a permanent 50-foot wide right-of-way, containing approximately 236 federal acres, is proposed for operational and maintenance purposes. The pipeline would be fully operational year-round. The volume of natural gas in the pipeline would be approximately 300-400 million standard cubic feet per day (MMSCF/D). The length of term for the right-of-way requested by JGGC is thirty years.

The compression facility would be co-located with the existing Bird Canyon Compressor Station at the Jonah Gas Hub, located in NENW Section 34, T27N, R111W, in Sublette County, Wyoming. The compressor site would consist of either four (4) 3,000 horsepower engine-driven reciprocating compressor units or two (2) turbine driven centrifugal compressor units (12,000 total horsepower). The new compression would be sited on the existing Bird Canyon Compressor Station site. New compression and the existing compressor would occupy an area approximately 250 feet in width by 800 feet in length (approximately 4.6 acres).

2.1 PROPOSED ACTION

2.1.1 Design and Construction

2.1.1.1 Pipeline

A flagged survey has been established along the proposed route. All pipeline plans and specifications, alignment maps, utility and road profiles, cross sections, site-specific details, and design drawings associated with the project would be available for review at JGGC's office in Pinedale and the BLM Field Offices in Kemmerer and Rock Springs prior to issuance of the ROW grant. The design, engineering, maintenance, and inspection of the proposed pipelines would be performed by JGGC personnel or their contractors in accordance with safe and proven engineering practices.

Construction would begin upon BLM authorization. JGGC personnel would oversee construction by the contractor. Pipeline construction is expected to take approximately 75 days. JGGC would notify BLM at least 5 days prior to the anticipated start of construction and/ or surface-disturbing activities.

JGGC does not propose to do construction or routine maintenance activities during periods when the soil is too wet to adequately support construction equipment or when watershed damage is likely to occur. If such equipment creates ruts in excess of four inches deep, the soil would be considered too wet to adequately support construction equipment. Frozen soil or soil mixed with snow would not be used in construction.

The top 6 inches of topsoil would be removed and conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation. If the pipeline ROW is granted at a time when winter conditions exist, the following construction options would be considered by JGGC:

Option 1: Sagebrush would be cleared over the entire width of right-of-way with a brush beater. The right-of-way surface would be allowed to thaw, and melted topsoil would be scraped to side of right-of-way utilizing a dozer and/or blade. The scraping and thawing process would be continued until six inches of topsoil has been removed.

Option 2: Sagebrush would be cleared over the entire width of right-of-way with a brush beater. The top six inches of topsoil would be milled using a rotomill. Milled soil would be scraped to the side of the right-of-way. The 80-foot construction corridor would be cleared of above ground vegetation, obstacles, and 6 inches of topsoil, except in flagged areas of cultural significance where no topsoil would be removed. In areas of steep terrain, cuts, gullies, or stream crossings, some blading may be necessary to provide a safe and suitable working area.

After the ROW is cleared and graded, a trench 2-feet wide would be dug with a trencher or, in rocky areas or where the pipeline changes direction, with a backhoe (Figure 2-1). The proposed pipeline would be placed at depths of 3.5-4.5 feet, except at road crossings, where the depth would be 6 feet. Spoil and topsoil would be windrowed separately along the nonworking side of the trench.

Portions of the trench would be open for no more than 10 days, and exit ramps in the trench would be spaced at intervals of no more than 1.0 mile to allow for the passage of vehicles, livestock, and wildlife. Open trenches would be inspected daily for trapped livestock or wildlife, and JGGC would notify appropriate livestock permittees when trenching would occur in their allotments.

The proposed pipeline would consist of 24 inch, 0.375-inch wall thickness, Grade X-65, maximum allowable working pressure (MAOP) of 1440 psig. Pipe and other construction materials would be hauled to the job by truck, as needed, and stored along the ROW. A bending machine would be used to bend the pipe to fit the trench. Sections of pipe would be lined, welded together, coated with epoxy, and cathodically protected to prevent corrosion according to industry standards. Side-boom caterpillars would then be used to lower the pipe into the trench. In rocky areas, the trench would be padded with sand or soil using a ditch-padding machine.

After the pipeline is in place, the trench would be backfilled using an angle dozer or auger and the soil would be compacted to prevent subsidence. Any excavated material that cannot be placed in the trench would be disposed of in conformance with applicable landowner or agency requirements. After construction, no berms would remain on the surface, and no rock foreign to the surface would remain exposed. Hydro testing of the pipeline takes place after backfilling of the entire trench except at the final tie-in locations, which are used to separate the hydro test sections. Ripping the working side of the pipeline may be necessary to reduce compaction.

The pipeline would be pressure-tested with water after the trenches are backfilled. The pipeline would be filled with water and pressurized to 1.25 times their designated operating pressure for 8 hours to verify integrity. Test water would be pumped from the Green River, and permits or license agreements for the withdrawal would be obtained from the Wyoming State Engineer's Office and the BOR. JGGC would use approximately 1,164,600 gallons (3.93 acre-feet) of water for testing the Bird to Opal pipeline. Water would be pumped into a 7 to 10-mile section of pipe, pressurized, and released to the next 7 to 10-mile section. This procedure would be repeated for the entire pipeline length. Prior to release, hydrostatic test water would be tested and processed, if necessary, to ensure that it meets local, state, and federal water quality standards. The hydrostatic test water would be discharged into the drainage from which it was taken. All hydrostatic water testing and discharge would be approved in writing by the Wyoming Department of Environmental Quality/Water Quality Division (WDEQ/WQD). Before discharging any hydrostatic test water from the pipeline, workers would protect natural channels within the affected watershed by installing suitable energy dissipaters at pipeline outlets. To prevent scouring or erosion, JGGC would put in place channel protection materials such as filter bags, sandbags or rock. Upon completion of testing, JGGC would remove all installed materials and objects from the site.

At the Green River crossing, specialized horizontal directional drilling construction equipment would be utilized. Typical construction site arrangements for rig side workspace and pipe side workspace are shown on Figure 2-2. A pilot hole of about 4 inches in diameter would be drilled from the rig side to the pipe side (Figure 2-3). Sophisticated guidance equipment would be utilized to assure proper alignment of the pilot hole. Drill cuttings would be stored on each side of the bore in portable water tanks and would be properly disposed of upon completion of the bore. Once the pilot emerges on the pipe side of the bore, reamers of sequentially larger sizes would be utilized until the bore size of the pipe is achieved (30 inches for the 24 inch pipe at the Green River crossing). The bore would have 15 to 20 vertical feet of undisturbed earth between the bore and the riverbed to preclude disturbing the river's flow. In the mean time, welders would be preparing approximately 1,500 feet of pipe for installation in the bore. The pipe would be hydrostatically tested before it is pulled under the Green River. The pipe would be pulled by the drilling rig from the pipe side to the rig side. The current plan calls for a 1,300 foot bore length.

After pipeline construction is completed, markers would be installed at line-of-sight intervals and at road crossings to identify the pipeline's location within the ROW.

No material or borrow sites are anticipated to be necessary for pipeline construction. Approximately 756,000 gallons (2.32 acre-feet) of water for dust control would be obtained from the Green River. Permits or license agreements for water would be obtained from the Wyoming State Engineer's Office and the BOR. The total water required for JGGC actions would be 6.25 acre-feet.

All equipment and vehicular access to the pipeline project would be confined to existing roads and established ROWs. No reconstruction or rerouting of roads would occur.

Equipment used to construct the proposed pipelines would include trenchers, tractor-trailers, 2-ton trucks, pickup trucks, trenchers, ditch-padding machines, seed drillers, tractors, backhoes, trackhoes, side-boom caterpillars, and welding trucks.

2.1.1.2 JGGC Compressor Station

The compression facility would be co-located with the existing Bird Canyon Compressor Station at the Jonah Gas Hub, located in NENW Section 34, T27N, R111W, in Sublette County, Wyoming (Figures 2-4 and 2-5). The compressor station would accept natural gas at approximately 900 pounds per square inch (psi) at the inlet piping, separate liquids using a two-phase separator, discharge the natural gas at approximately 1300 psi, and cool the gas prior to discharge with electric fan coolers driven by a generator. Condensate would be stored on-site in tanks equipped with a combustion chamber to control tank flashing and would be trucked off-site periodically. The compressor site would consist of up to four (4) 3,000 horsepower engine-driven reciprocating compressors or two (2) turbines, contingent upon continued drilling success and volumes. Equipment would consist of four (4) Caterpillar 3612LE 2935 hp compressor engine/reciprocating compressor units equipped with oxidization catalysts or two (2) gas fired turbine driven/centrifugal compressor units with appropriate emissions equipment, three (3) 400 barrel (bbl) oil tanks, one (1) 300 bbl/day two-phase separator, and one (1) combustion chamber with 250 a mcf/day capacity. The proposed equipment would be contained in a fenced area approximately 800 feet by 200 feet (approximately 4.6 acres) located adjacent to an existing county road. New construction would take place inside the fence of the existing Bird Canyon Compressor Station, with no new disturbance.

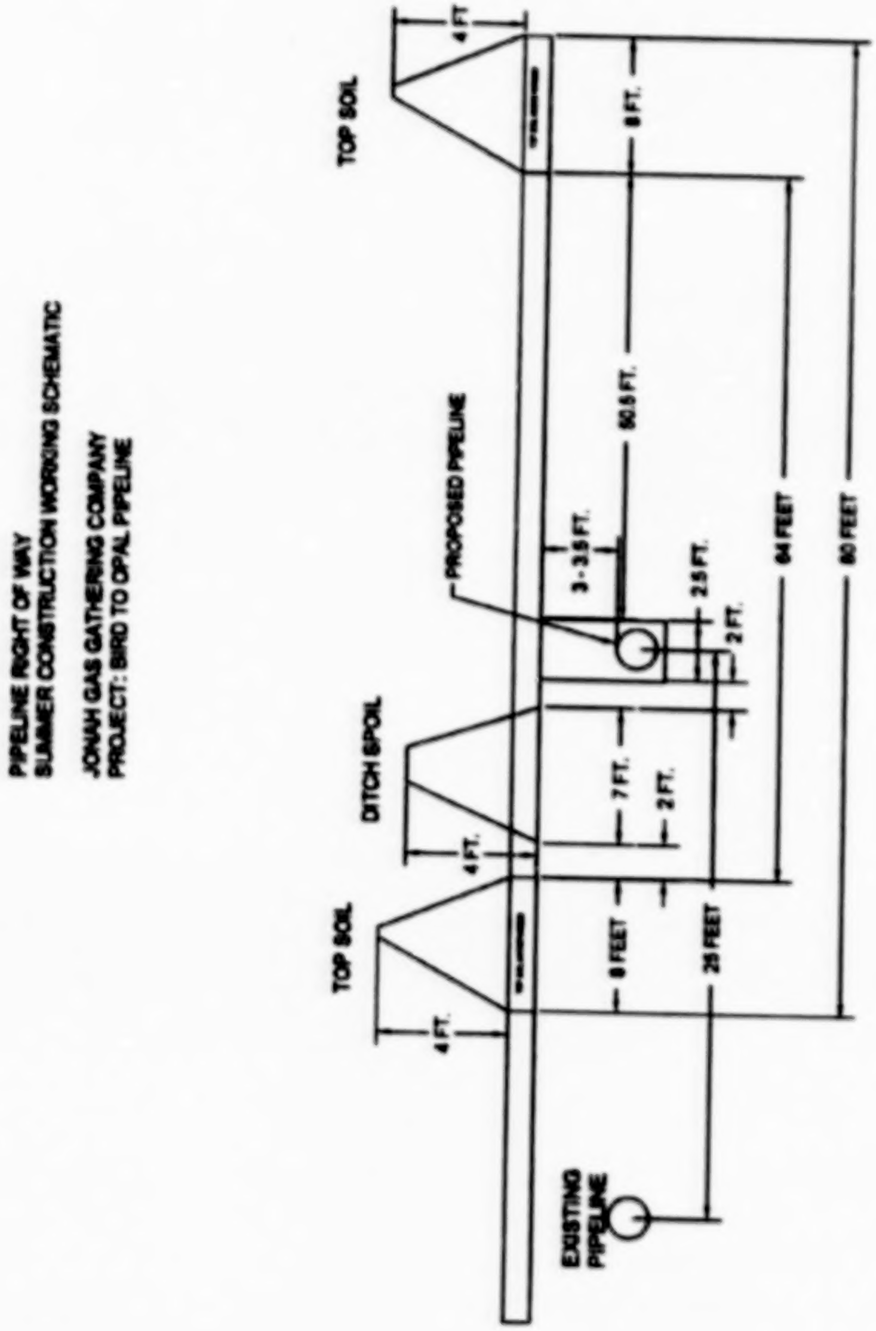

Figure 2-1. Schematic of Pipeline Installation.

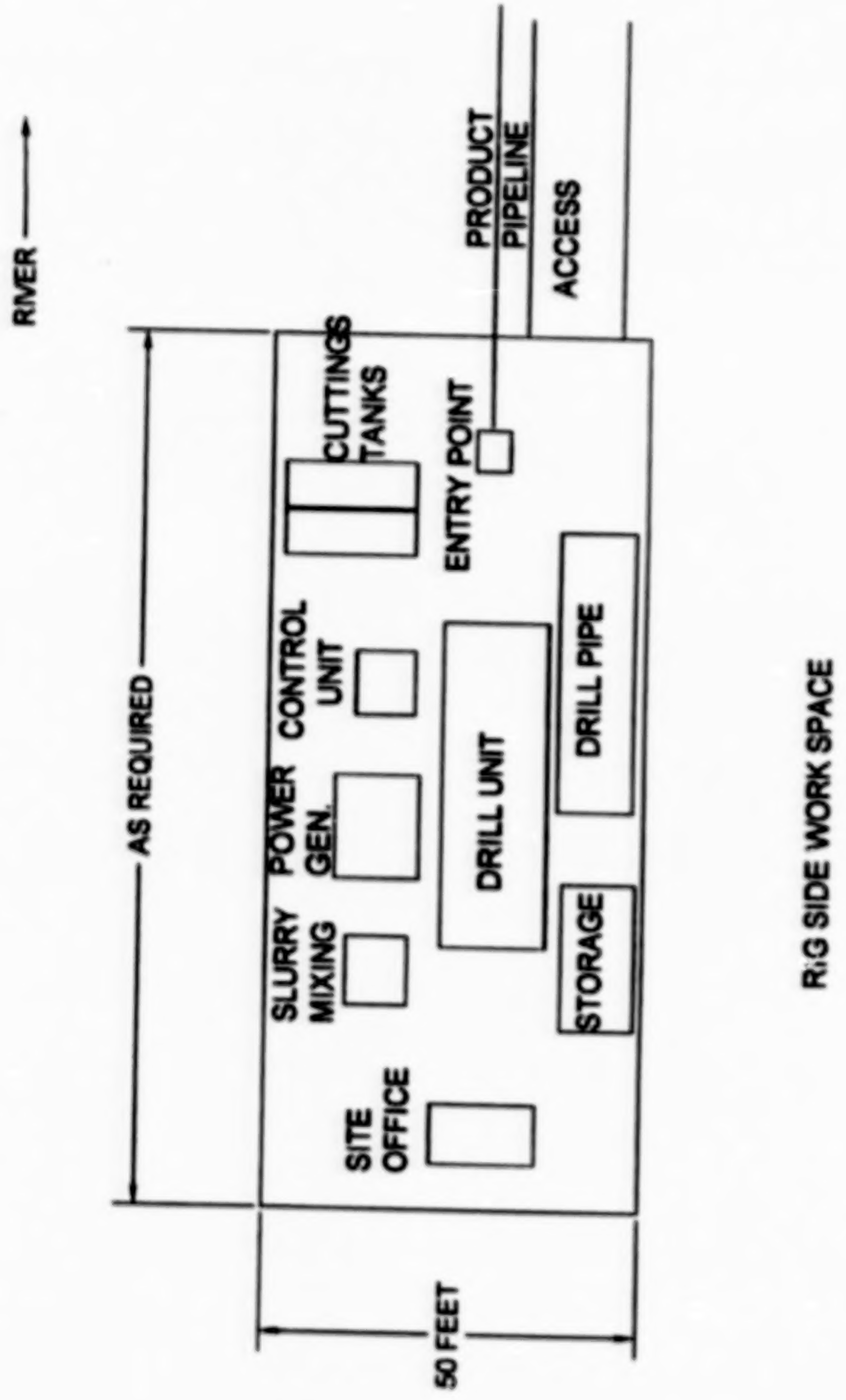

Figure 2-2. Green River Bore Site - Rig Side Work Space.

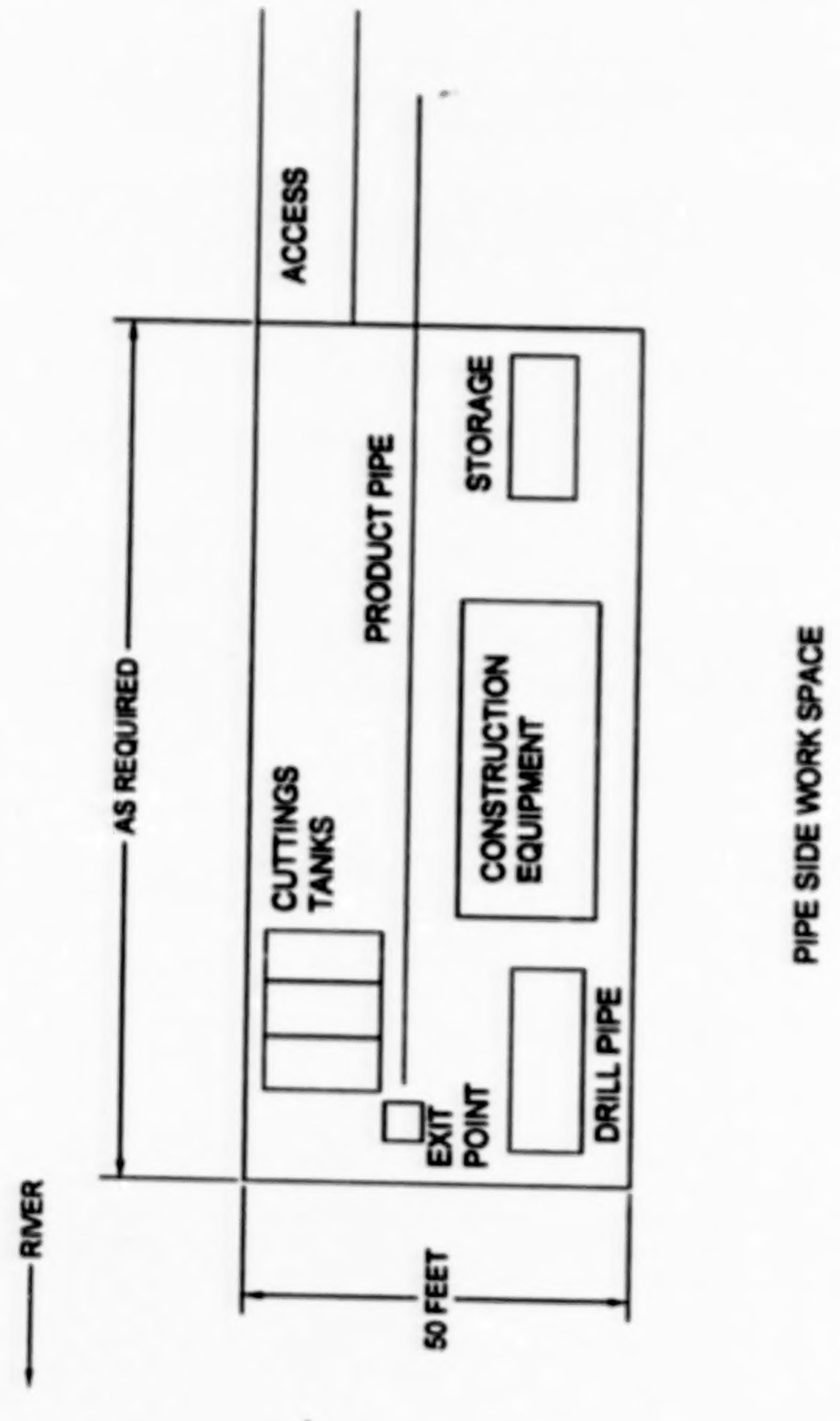

Figure 2-3. Green River Bore Site - Pipe Side Work Space.

Line scrubbers would be placed on the suction side of compressors to separate condensed liquids from the gas stream. The scrubber system would include large diameter (48- to 72-inch) horizontal line separators, compressor skid inlet scrubbers, and fuel gas scrubbers, which would discharge into the 400-bbl tanks. About 0.5 bbl of condensate would be recovered for every million cubic feet of gas that flows through the scrubber system.

JGGC workers and contractors would implement all appropriate safety measures in the design, construction, operation, and maintenance of the compressor station.

JGGC would have inspectors present during the construction of the facility. Construction of the compressor station is anticipated to be completed within 90 days. Compressor engine modules would be prefabricated and assembled off-site, then transported to the station by truck and placed on concrete pads. Associated piping would be fabricated and attached to facilitate gas flow.

2.1.2 Operation and Maintenance

2.1.2.1 Pipeline

Prior to utilizing the pipeline, JGGC would submit to the BLM authorized officer (AO) a certificate of construction verifying that their pipeline has been constructed and tested in accordance with the terms of the ROW grant and in compliance with the plans and specifications and all applicable federal and state laws and regulations (The BLM AOs for this project would be the Rock Springs and Kemmerer Field Managers).

JGGC would routinely patrol and inspect the pipeline to check for problems such as erosion, pipe exposure, ROW conditions, unauthorized encroachment on the ROW, and any other situations that may result in a safety hazard or may require preventive maintenance. These inspections would be conducted on foot or from a vehicle along existing roads. Vehicles would not traverse pipeline ROWs without prior permission from the BLM. If damage should occur to pipes from external sources, repair or replacement of the portion of the pipeline would be completed. JGGC has developed line break and emergency procedures which would be implemented in the unlikely event of an emergency. These procedures are available for review at the JGGC office in Pinedale.

2.1.2.2 Compressor Station

The compressor station co-located to the Bird Compressor Station would accept natural gas from the inlet pipeline at 850 psi and discharge at 1,380 psi. JGGC employees would operate, maintain, and monitor the station using remote monitoring and alarm equipment. Flare stacks would be continuously operated, piloted, and monitored following the WDEQ Air Quality Division's (WDEQ/AQD's) requirements and industry technology.

Non-Selective Catalytic Reduction (NSCR) systems, air/fuel ratio controllers, and an enclosed combustion chamber would be utilized to reduce emissions of NOx, carbon monoxide (CO), and VOCs from the engine exhaust stacks. NOx, CO, and VOC reduction would be equal to or greater than 98%, 95%, and 85%, respectively.

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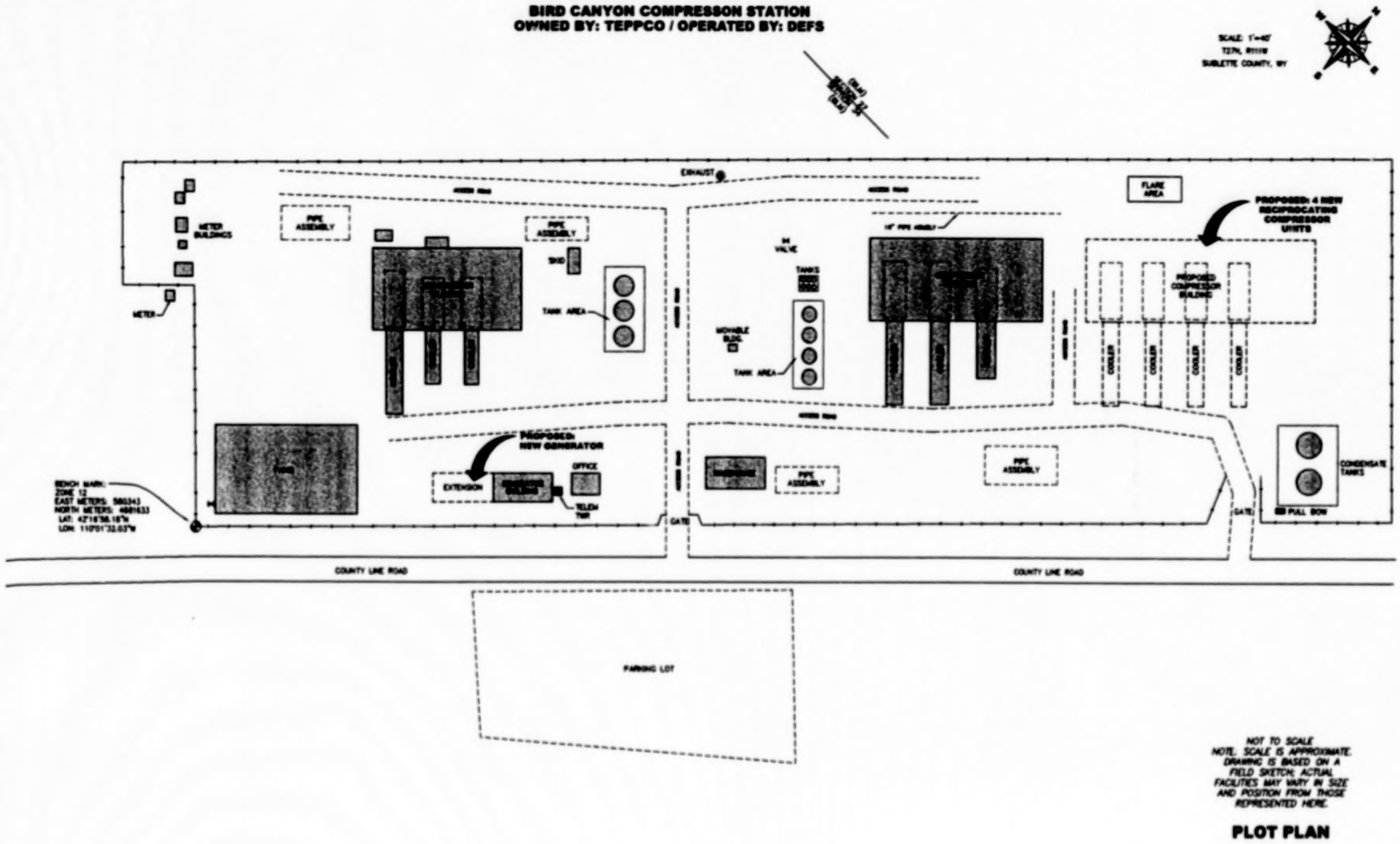

Figure 2-4. JGGC Compressor Station Showing 4 Reciprocating Compressor Units.

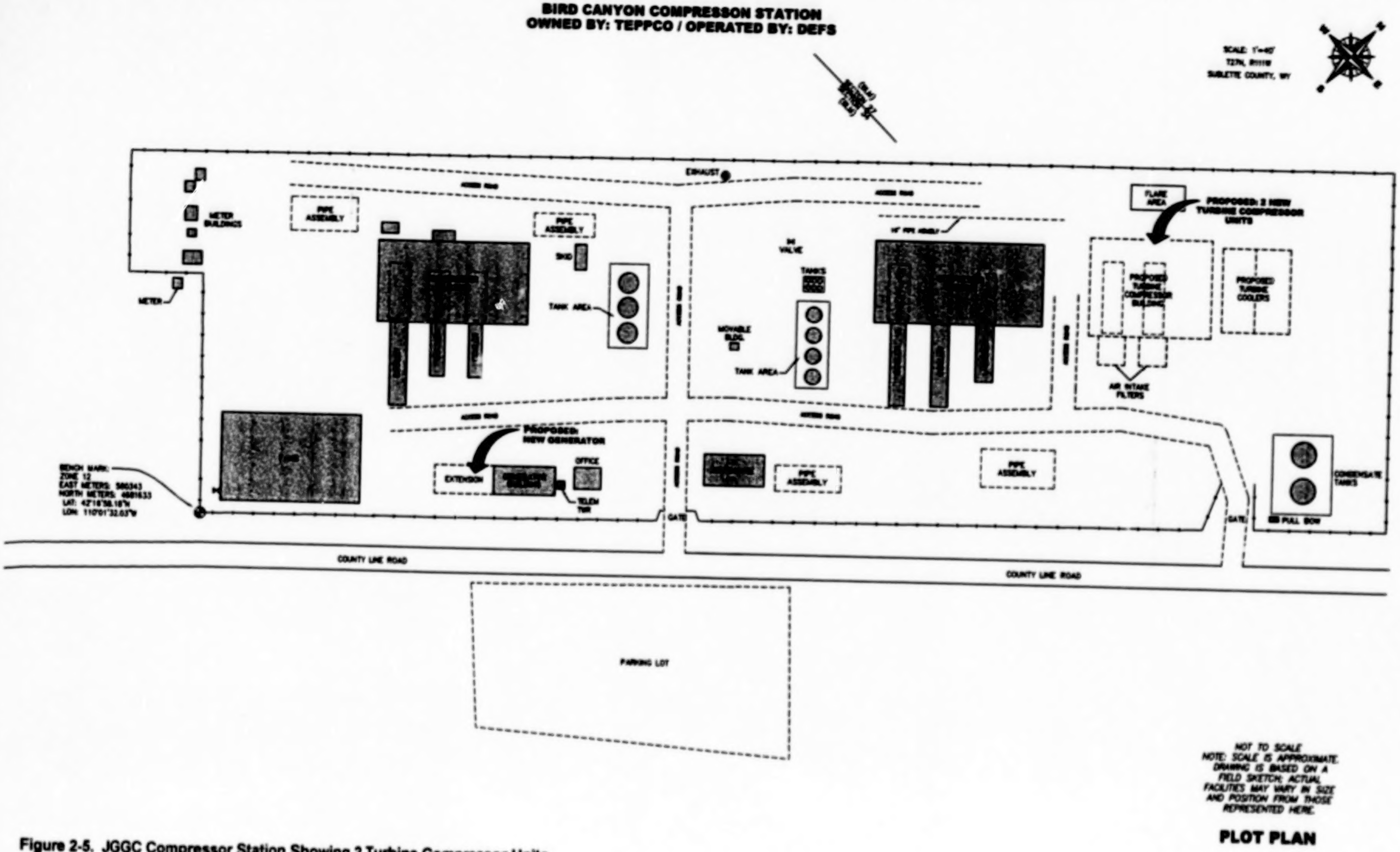

Figure 2-5. JGGC Compressor Station Showing 2 Turbine Compressor Units.

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Total emissions from the Bird Canyon Compressor Station are discussed in Section 4.2 (Air Quality) of this EA.

2.1.3 Reclamation

Operators would scarify, grade, and contour all disturbed areas to preconstruction conditions. Soil compaction on the working side of the pipeline may require ripping prior to final reclamation. Topsoil would be evenly spread and disturbed areas would be revegetated to blend with the surrounding terrain. Reclamation would be accomplished as soon as possible after disturbance occurs. Appropriate measures would be taken to prevent erosion using construction diversion terraces, riprap, matting, and water bars. Water bars would be placed approximately every 25 feet on steep slopes to prevent erosion. Any drainages encountered during construction would be cleared of dirt and debris and backsloped as closely as possible to their original contours.

All disturbed areas along the pipeline corridor would be reseeded to landowner or regulatory agency specifications. JGGC would use the application rates and seed mixtures for reseeding disturbed areas shown in Table 2-1.

Seeding would take place during the spring or late fall when the ground is not frozen. In suitable areas, seed would be planted using a drill equipped with a depth regulator to ensure proper depth of planting. The seed mixture would be evenly and uniformly planted over the disturbed area. Areas not appropriate for drilling, such as steep slopes, would be broadcast-seeded and raked or chained to cover the seed. Seeding rates for broadcast-seeded areas would be double that used in drill-seeded areas. Seeding would be repeated until a satisfactory stand is established as determined by the BLM AO. Evaluation of growth would not be made before completion of the first growing season after seeding.

JGGC would be responsible for weed control on the disturbed areas within the limits of their ROWs and would consult with the AO and/or local authorities for acceptable weed control methods.

JGGC proposes to conduct operations on BLM and Bureau of Reclamation administered lands as follows:

- Certified weed-free seed would be used during re-seeding of disturbed areas.
- Native plant species would be used in reseeding.
- Noxious weed control would be conducted for the life of the project (30 years).
- Monitoring noxious weeds and success of planting would be done.
- All compacted areas would be ripped to the necessary depth to reduce compaction prior to seeding.
- The minimum surface disturbance required to install the pipe would occur.

2.1.4 Abandonment

At the end of the useful life of the pipelines, JGGC would obtain necessary authorizations from the BLM to abandon the facilities. JGGC would contact the AO to arrange a pre-termination conference and a joint inspection of the ROW to agree on an acceptable abandonment plan.

Table 2-1. Seed Mixtures Recommended for Reseeding Disturbed Areas on the Bird Canyon to Opal 24-inch Pipeline Project.

Upland Sites Seed Mix

Species	Variety	Drill Seeding Rate[1]
Western wheatgrass	Rosanna	6.0
Thickspike wheatgrass	Critana	6.0
Indian Ricegrass	Nezpar	3.0
Shadscale saltbush[2]		3.0
Globemallow[3]		0.5
TOTAL		17.5

1. Drill Seeding Rate = Lbs/Acre Pure Live Seed (PLS)
2. Substitution for shadscale saltbush: Gardner saltbush
3. Substitution for globemallow: other globemallow species, white yarrow or blue flax

Saline Lowlands Seed Mix

Species	Variety	Drill Seeding Rate[1]
Western wheatgrass		6.0
Bottlebrush squirreltail		3.0
Gardner saltbush		2.0
Indian ricegrass		4.0
TOTAL		15.0

1. Drill Seeding Rate = Lbs/Acre Pure Live Seed (PLS)

Wet Meadow/Marsh Seed Mix

Species	Variety	Drill Seeding Rate[1]
Alkali sacaton		3.0
Nebraska sedge		1.0
Tufted hairgrass		2.0
Alkali grass		4.0
TOTAL		10.0

1. Drill Seeding Rate = Lbs/Acre Pure Live Seed (PLS)

Pipeline abandonment would be accomplished in accordance with the policies and standards employed by BLM at the time of abandonment. The pipeline would be purged of all combustible materials and retired in place. Operators would remove all aboveground facilities and dispose of unsalvageable materials at authorized sites. Regrading and revegetation of disturbed areas, as applicable, would be completed according to BLM or landowner standards, and the abandoned ROW would revert to the control of the landowner .

2.1.5 Work Force

Pipeline construction would require up to 100 JGGC workers at the peak of construction. Construction workers would be hired from the local southwestern Wyoming work force, and no temporary work camps are proposed.

2.1.6 Hazardous Materials

All measures necessary and appropriate for the prevention and containment of accidental discharges would be taken by JGGC. Refueling of machinery and fuel storage would not be allowed within 500 feet of a perennial, intermittent, or ephemeral stream channel.

To conform with state and federal regulations, any used or unused engine oil or other lubricants would be stored in appropriate labeled containers and disposed of at an approved site. These lubricants would not be stored within 500 feet of a perennial or ephemeral stream.

JGGC would conform with provisions of the *Toxic Substances Control Act of 1976*, as amended (15 United States Code [USC] 2601, et seq.) with regard to any toxic substances that are used, generated by, or stored on the ROW or on facilities authorized under ROW grants (see 40 CFR 702- 799 and especially provisions on polychlorinated biphenyl-- 40 CFR 761.1-761.193). Any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity as established by 40 CFR 117.3 would be reported as required by the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, Section 102 B. Copies of reports required by federal or state agencies for a release or spill of any hazardous material would be furnished to the AO within 5 working days of occurrence.

JGGC agrees to indemnify the U .S. against any liability arising from the release of any hazardous substance or hazardous waste (as defined in the *Comprehensive Environmental Response, Compensation and Liability Act of 1980*, 42 USC 9601 et seq., or the *Resource Conservation and Recovery Act of 1976* [RCRA], 42 USC 6901 et seq.) on their respective ROW /TUPs, unless the release or threatened release is wholly unrelated to JGGC activities on the ROW /TUP. This agreement is applied without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

Regarding herbicide use, JGGC would comply with all federal and state laws and with registered uses and limitations imposed by the AO. Before using herbicides, JGGC would obtain written approval from the AO of a plan showing the type and quantity of material used, pest(s) to be controlled, application methods, storage locations, container disposal, and any other information deemed necessary by the AO.

2.1.7 Applicant-committed Practices

2.1.7.1 Survey Monuments

JGGC would protect all survey monuments, witness corners, reference monuments, and bearing trees within the ROW against disturbance during construction, operation, maintenance, and rehabilitation. If any monument, corner, or accessory is destroyed, obliterated, or damaged, JGGC would arrange for a registered land surveyor to restore the disturbed monument, corner, or accessory using surveying procedures specified in the *Manual of Surveying Instruction for the Survey of Public Lands of the United States*, 1973 edition. JGGC would record the survey in the appropriate county and send a copy to the appropriate BLM office.

2.1.7.2 Fire Control

JGGC would notify the AO of any fires during construction and would comply with all rules and regulations administered by the AO concerning the use, prevention, and suppression of fires on federal lands.

In the event of a fire, JGGC or their contractors would initiate fire suppression actions in the work area. Suppression would continue until the fire is out or until the crew is relieved by an authorized representative of the agency on whose land the fire occurred. Heavy equipment would not be used for fire suppression outside the ROW without prior approval of the AO unless there is imminent danger to life or property. JGGC or their contractors would be responsible for all costs associated with the suppression of fires and the rehabilitation of fire damage resulting from their operations, employees, or contractors.

JGGC would designate a representative to be in charge of fire control during pipeline construction. The fire representative would ensure that each construction crew has fire-fighting tools and equipment, such as extinguishers, shovels, and axes, available at all times. The number of tools needed would depend on the number of persons working in the area. JGGC would, at all times during construction, maintenance, and operations, require that satisfactory spark arresters be maintained on internal combustion engines.

2.1.7.3 Cultural Resources

Class III surveys have been completed on the area proposed for surface disturbance and reports were submitted to the BLM Rock Springs and Kemmerer Field Offices. JGGC and contractors would inform their employees about relevant federal regulations protecting cultural resources. If any cultural remains, monument sites, objects, or antiquities subject to the *Antiquities Act of June 8, 1906* or the *Archaeological Resources Protection Act of 1979* are discovered during construction, activities shall immediately cease and the responsible AO would be notified. Notification of the AO would be in the case of any previously unidentified or unanticipated cultural remains.

The actual locations of the specific cultural properties identified by their site numbers referred in this section are in the cultural inventory reports on file in the Kemmerer and Rock Springs Field Offices.

1. The BLM will require the standard stipulation regarding discovery of unanticipated cultural resources on the authorization.

2. Jonah Gas Gathering Company will state in their Plan of Development (POD) that they will comply with the terms of the discovery plan, as detailed in *Appendix C, Discovery Plan and Research Orientation in Class III Cultural Resources Inventory and Site Reconnaissance, Bird Canyon to Opal 24-inch Pipeline and Staging Areas, Sublette, Sweetwater, and Lincoln Counties, Wyoming*, by J. Yerkovich (May 2003) of Western Archaeological Services, Rock Springs, Wyoming.

3. The POD will be revised to include a requirement for a temporary protective barrier fence around the north edge and northeast corner of the bore staging east of State Highway 240, to ensure that property 48LN4003 will not be affected by construction. The fence must be erected before the start of construction and a qualified archeologist must be present to monitor fence installation in the proper location. The fence must remain in place until final right-of-way reclamation has been completed.

4. The entire length of the pipeline will be monitored via an open trench inspection. Surface-disturbing activities within 200 feet of sites 48SW14688 as well as 48SW6926 and 1,320 feet of site 48SW4197 will be conducted in conformance with the discovery plan in Appendix C of the cultural report.

5. The proposed work area within 1,320 feet of site 48SW4197 will have a modified work area in order to eliminate the potential for damage to this resource and the conditional surface use area associated with it. No impacts to the trail trace are permitted. A temporary fence will be erected at the margin of the existing disturbances in this area in such a fashion as to prevent damage to the ruts.

6. The work area within the recorded boundaries of site 48SW14688 will be reduced at least in half.

2.1.7.4 Paleontological Resources

If paleontological resources are uncovered during construction activities, JGGC or their contractors would suspend all operations to prevent further disturbance of such materials and would immediately contact the BLM's AO, who would arrange for a determination of significance and, if necessary, recommend a recovery or avoidance plan. Mitigation of paleontological resources would occur on a case-by-case basis, and JGGC would be responsible for the costs.

2.1.7.5 Air Quality/Noise

All vehicles and construction equipment would be maintained to minimize exhaust emissions and would be properly muffled to minimize noise. Disturbed areas would be watered as necessary to suppress dust. Noise from construction activities would be of short duration.

At the proposed compressor station, JGGC would utilize either:

- low-emission (0.7 grams NOx/hp-hour) reciprocating compressor engines; or

- turbine drivers (lean combustion/air-fuel premix) with 0.10 lb/MMBtu NOx emissions.

Furthermore, a 98% efficient, smokeless, flare stack would be used to control VOC emissions from tanks. Compressor engines would emit a constant loud noise (approximately 65 dBA (" A"-weighted decibels] on-site and 40 dBA at 0.25 mile) for the LOP.

2.1.7.6 River and Wetland Crossings

JGGC would bore under the Green River and associated wetlands, avoiding surface disturbance. Borings would be located far enough away from the stream channels to ensure that bank stability is not jeopardized. JGGC would trench crossings at all other stream crossings and numerous unnamed ephemeral drainages along the pipeline corridor.

Operators would ensure that all fueling, servicing, and staging of vehicles takes place more than 500 feet from any river, stream, or riparian area.

At crossings of rivers and wetlands, JGGC would comply with all U.S. Army Corps of Engineers (COE) Wyoming regulatory Office regulations.

2.1.7.7 Invasive/Noxious Weeds

- Incorporate best known weed prevention measures as outlined in Appendix 4 of Partners *Against Weeds: An Action Plan for the Bureau of Land Management*.
- Incorporate invasive/noxious weed management strategies into the preconstruction planning and design process for all surface disturbance activities including road, pipeline, well pad and ancillary facility construction.
- Inventory and remove existing invasive/noxious weed seed sources that could be transported into relatively weed-free areas by passing vehicles.
- Clean muddy off-road equipment before moving into relatively weed-free areas.
- Stabilize disturbed areas and reestablish vegetation on all bare ground using mixtures and treatment guidelines prescribed in the approved APD/ROW as soon as practical to minimize weed spread.
- Store gravel, top soil and fill in relatively weed-free areas.
- Where possible, limit access to all disturbed sites that are not yet re-vegetated.
- Monitor disturbed and re-vegetated sites to ensure that desired species are thriving and invasive/noxious weeds are not present. Treat, reseed and fertilize as necessary.
- Monitor roads and other disturbed areas throughout the life of the project and for three years after reclamation to insure that invasive/noxious weeds are identified and eradicated.

- Ensure that all invasive/noxious weed control measures adhere to standards in the Decision Record for the Rock Springs District Noxious Weed Control EA or applicable updated guidance.

- Cooperate with the Lincoln County Weed and Pest District to identify appropriate methods of weed control.

- Before treatment of invasive/noxious weeds, submit Pesticide Use Proposal (PUP) to the BLM for approval, ensure that all pesticides intended for use are on the BLM's approved label list for use public lands (the label list is updated each year). The PUP(s) s must be approved prior to any spraying. PUP's can be approved for up to a three-year period.

- Ensure that pesticide applicators are certified with an up to date Pesticide Applicator's License before performing spraying work.

- Submit Pesticide Application Records to the BLM KFO each year. Ensure that treatments comply with all federal and state regulations regarding use of pesticides, including those outlined in the following:

    - BLM Information Bulletin No. WY-98-106, *Weed Management Guidance*;
    - Instruction Memorandum No. WY-99-29, *Executive Order #13112 : Invasive Species*;
    - Washington Information Bulletin No. 99-110; *Submission of Pesticide Use Report*;
    - Information Bulletin No. WY-2000-25: *Annual Pesticide Use Report*.

2.1.7.8 Protection of Resource Access Roads

Existing roads to be used by JGGC for access would be designated by signing prior to construction. No unauthorized roads would be used by JGGC or their contractors. Roads would be used within the established travelway of that particular road. No construction or routine maintenance activities would be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 4 inches deep, the soil would be deemed too wet to adequately support construction equipment. Roads would be reclaimed to as good or better condition than prior to use.

2.1.7.9 Winter Construction Options

If the pipeline ROWs/TUPs are granted and construction occurs when winter conditions exist, the following options would be considered.

Option 1

- Vegetation would be cleared over the entire width of the ROW /TOP with a brush beater.

- ROW /TUP surface would be allowed to thaw, if necessary.

- Thawed topsoil would be scraped to one side of ROW /TOP using a dozer and/ or blade.

- Scraping/thawing processes would be continued until 6 inches of topsoil are removed.

Option 2

- Vegetation would be cleared over the entire width of the ROW /TUP with a brush beater.
- The top six inches of topsoil would be milled using a rotomill. Milled soil would then be scraped to one side of the ROW /TUP .

Option 3

- Other BLM-approved actions to remove 6 inches of topsoil.

2.1.7.10 Wildlife

JGGC would comply with the following guidelines concerning avoidance of raptor nests and sage grouse leks and nesting areas.

Big Game

As portions of the proposed pipelines are on pronghorn crucial winter range, JGGC would adhere to the No Surface Occupancy stipulation from November 15 to April 30, unless a written exception is granted.

Raptors

Operators would not remove cottonwood trees at the Green River crossing to protect potential raptor nesting and/ or roosting habitat. Operators would bore at the crossing to ensure trees are protected.

Where feasible, pipeline ROWs and TUP areas would be selected and designed to avoid disturbance to raptor nests. If construction activities were to occur between February 1 and July 31, surveys for raptor nests within 0.5 to 1.0 mile of the proposed pipeline routes would be conducted to determine nest occupancy. All construction activities would be restricted between February 1 and July 31 within a 0.5-mile radius of all occupied raptor nests except ferruginous hawk and bald eagle nests, for which the seasonal buffer would be 1.0 mile. Surface structures requiring repeated human presence would not be constructed within 825 feet (1,970 feet for eagles) of active raptor nests, where practical. An active raptor nest is defined as a nest that has been occupied within the past 3 years.

Sage Grouse

Surface disturbance within 0.25 mile of any sage grouse lek would be avoided. If construction activities are planned in potential sage grouse nesting habitat (i.e., areas within 2 miles of an active lek) between February 1 and July 1, BLM wildlife biologists would conduct field evaluations to identify active nests or leks, and if an active sage grouse nest is identified in an area proposed for disturbance, construction activities would be delayed until nesting is completed and the young are fledged.

Mountain Plover

Surface disturbance in mountain plover nesting areas would be prohibited between April 10 and July 10. Should construction in potential mountain plover habitat be planned for the prohibited time period, BLM biologists would conduct field investigations to determine the presence of this species.

Fish Species

The project area is within the Colorado River system, which contains several threatened fish species. The water for hydrostatic testing and dust control would be withdrawn from the Green River, which is a tributary to that system, and would be returned after use. This would minimize any affect upon the threatened species. In addition, JGGC would participate in the "Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin" as a reasonable and prudent alternative pursuant to the Endangered Species Act.

Sensitive Animals and Plants

The BLM would conduct U.S. Fish and Wildlife Service (USFWS) consultation and coordination as necessary for all mitigation activities relating to T&E, candidate species and their habitats. In areas that have not been previously surveyed or cleared for these species, a qualified biologist/botanist would conduct surveys for these species in areas of potential habitat prior to disturbance. If T &E, candidate, or sensitive species are found, consultation with the USFWS would be initiated, as necessary, and construction activities would be curtailed until the BLM, USFWS, and Operators concur on which activities can be authorized.

Proposed construction sites in prairie dog colonies would be surveyed by BLM or a BLM approved contractor prior to construction of the JGGC Bird Canyon-Opal Pipeline, under the direction of the BLM, to determine white-tailed prairie dog colony/complex size and burrow density, and to determine whether criteria for black-footed ferret habitat are met. To protect black-footed ferrets potentially occurring in the area, JGGC would implement ferret surveys of suitable white-tailed prairie dog colonies affected by the proposed pipeline route as directed by the BLM and/or the USFWS. A black footed ferret survey was completed in September, 2002 in a large prairie dog town near Section 26, T-22-N, R-112-W, which is along the proposed pipeline route (Dana, 9/30/02). Results of the 9/30/02 survey were negative.

JGGC would conduct site-specific surveys for sensitive plants on uncleared areas as directed by the BLM.

2.1.7.11 Historic Trail Crossings

JGGC would comply with all BLM and State Historic Preservation Office (SHPO) recommendations for crossings of Historic Trails. Trails would be crossed in areas of existing disturbance and no new disturbance would occur in undisturbed portions of trails. Historic trail segments would not be used by JGGC or their contractors to access the pipeline ROW.

2.1.7.12 Sanitation

Construction sites would be maintained in a sanitary condition at all times. Waste materials--human waste, trash, garbage, refuse, etc., would be disposed of promptly at an appropriate waste disposal site. A litter-policing program, approved by the AO, would be implemented by JGGC to cover all roads and other sites associated with the pipeline ROW.

2.1.7.13 Existing Utilities

JGGC would secure an ROW on public lands from the BLM prior to pipeline construction and would notify other authorized ROW users of any pipeline crossings or overlaps. Any associated building or zoning on river, creek, or utility crossing permits would be secured from the appropriate regulatory agency or private entity prior to pipeline construction.

2.1.7.14 Visual Resources

JGGC would restore the pipeline ROW to as near its original contour as possible after construction is completed. The ROW would be planted with the seed mixture(s) recommended by JGGC and approved by the BLM. All aboveground facilities would be painted with Carlsbad Canyon 2.5Y 6/2 or similar color determined by the AO to blend with the surrounding landscape.

2.2 ALTERNATIVES

2.2.1 Alternative Pipeline Routes

During development of the Proposed Action, alternative pipeline routes were considered, but the Proposed Action route was determined optimal because they would parallel existing ROWs for most of their lengths, thereby minimizing environmental impact.

2.2.2 No Action Alternative

Under the No Action Alternative, the pipeline would not be constructed. No ground would be disturbed and no impacts to the existing physical or biological environment would take place.

2.3 ALTERNATIVES CONSIDERED BUT NOT FURTHER EVALUATED

There were no alternatives considered but not further evaluated.

CHAPTER 3

AFFECTED ENVIRONMENT

CHAPTER 3

AFFECTED ENVIRONMENT

3.0 INTRODUCTION

The Affected Environment chapter of this environmental assessment (EA) for the proposed Bird to Opal Natural Gas Pipeline project discusses environmental, social, and economic factors as they currently exist within the project area. The material presented here has been guided by management issues identified by the Bureau of Land Management (BLM), Rock Springs and Kemmerer Field Offices; public scoping; and by interdisciplinary field analysis of the area.

This proposal could potentially affect critical elements of the human environment as listed in BLM's National Environmental Policy Act (NEPA) Handbook H-1790-1 (USDI-BLM 1988)(Table 3-1).

Table 3-1. Critical Elements of the Human Environment[1], Bird to Opal Natural Gas Pipeline, Sublette, Sweetwater, and Lincoln Counties, Wyoming

Element	Status on the Project Area	Addressed in text of EA
Air Quality Issues	Potentially affected	Yes
Areas of critical environmental concern	None present	No
Cultural resources	Potentially affected	Yes
Environmental justice	Potentially affected	Yes
Prime or unique farmlands	None present	No
Floodplains	None present	No
Native American religious concerns	Potentially affected	Yes
Invasive plants	Potentially affected	Yes
Threatened and endangered species	Potentially affected	Yes
Hazardous or solid wastes	Potentially affected	(Chapter 2, Section 2.1.6)
Water quality (surface water)	Potentially affected	Yes
Wetlands/riparian zones	Potentially affected	Yes
Wild and scenic rivers	None present	No
Wilderness (study area)	None present	No

[1] As listed in BLM *National Environmental Policy Act Handbook H-1790-1* (BLM 1988b) and subsequent Executive Orders

The material presented here has been guided by management issues identified by the Bureau of Land Management (BLM), Kemmerer and Rock Springs Field Offices; public scoping; by interdisciplinary field analysis of the area; and field data and analysis provided in an environmental analysis completed on the existing Bird-Canyon-Opal Pipeline (Environmental Assessment and Finding of No Significant Impact for the Bird Canyon-Opal Pipeline, Granger Spur Pipelines, and One Compressor Station, Sublette, Sweetwater, and Lincoln Counties, Wyoming, BLM 1999), and field data and analysis provided in an environmental analysis completed on the existing Opal Loop Pipeline (Environmental Assessment and Finding of No Significant Impact for the Opal Loop Natural Gas Pipeline and Compressor Station, Sublette, Sweetwater, and Lincoln Counties, Wyoming, BLM, 2001).

Table 3-2. Other Elements for Analysis, Bird to Opal Natural Gas Pipeline, Sublette, Sweetwater, and Lincoln Counties, Wyoming.

Element	Status on the Project Area	Addressed in [illegible]
Geology/Minerals/Paleontology/Hazards	Potentially affected	Yes
Soils	Potentially affected	Yes
Vegetation	Potentially affected	Yes
Wildlife	Potentially affected	Yes
Special Status Species	Potentially affected	Yes
Noise	Potentially affected	Yes
Visual Resources/Recreation	Potentially affected	Yes
Ground Water	Not affected	No
Socioeconomic Issues	Potentially affected	Yes
Range/Other Uses	Potentially affected	Yes
Cumulative Impacts	Potentially affected	Yes

3.1 GEOLOGY/MINERALS/PALEONTOLOGY/HAZARDS

3.1.1 Geology

Detailed accounts of geology and mineral resources in the vicinity of the proposed pipeline are presented in Green River Resource Area RMP EIS (BLM 1992, 1996a), Kemmerer RMP EIS (BLM 1985a, 1985b), Fontenelle Natural Gas Infill Drilling Projects EIS (ELM 1995a), and the EIS for the Expanded Moxa Arch Area Natural Gas Development Project (BLM 1995b).

3.1.2 Minerals

The proposed pipeline route lies within the Green River Basin, part of the Green River Drainage Basin (BLM 1985a). The Green River Basin contains several mineral resource deposits, including the world's largest deposit of trona, but the principal resource extracted from the area is natural gas. North and slightly south of the Green River and south and west of Fontenelle Reservoir, the Laney Member of the Green River Formation dominates the surface geology. Surface geology of the area south of the Green River to Granger is dominated by the Bridger Formation, which formed many badland areas, with small dune sand and terrace gravel inclusions. Alluvium and colluvium deposits along the Green River, Shute Creek, and Seven mile Gulch are the result of glacial melt.

3.1.3 Hazards

The project area has not experienced any major earthquakes within historic times. The U .S. Geological Survey (USGS) estimates that a magnitude 4.2-4.5 earthquake might occur somewhere in the Green River Basin every 62 years (BLM 1996b). Some areas of windblown sand deposits are presently stabilized by vegetation. There are no trona mine shafts within 1 mile of the proposed route; therefore, subsidence is not a concern. No major landslides have been mapped within the Fontenelle Cumulative Impact Study Area or the Moxa Arch Analysis Area, and the nearest active faults with surface expression occur far to the west (BLM 1995a, 1995b).

Because the proposed project would not impact geology, minerals, or geologic hazards or be impacted by geologic hazards, these resources are not discussed further in this document.

3.1.4 Paleontology

Because of the length of the proposed pipeline route and the potential for significant fossil discoveries, a nonfield paleontologic resource evaluation was conducted (EVG 1998, 2002).

Paleontologic resources are the remains of prehistoric organisms which have been preserved by natural processes within the earth's crust (BLM 1995b). The fossil record of the Green River Basin is well-documented (BLM 1992; EVG 1998) and suggests a potential for additional discoveries of fossils representing a variety of life forms. In particular, the Bridger Formation and the Laney Member of the Green River Formation have high paleontologic potential, meaning they have produced significant vertebrate, invertebrate, or plant fossils. The Bridger Formation is rich in mammal fossils and has also produced fossil turtles, freshwater mollusks, leaves, fish, crocodiles, and birds (BLM 1992). The Laney Member has produced a variety of fish fossils (BLM 1995a). A detailed account of the geology and paleontological potential of the Bridger Formation and Laney Member are presented in EVG (1998).

3.2 CLIMATE AND AIR QUALITY

3.2.1 Climate

The pipeline project area is located in a continental dry, cold-temperate-boreal climate (Trewartha 1968), which has limited rainfall and long, cold winters. Meteorological measurements collected at La Barge, Wyoming (1958-2000), approximately 9 miles west of the project area, indicate that the annual average total precipitation for the area is 8.3 inches, ranging from 3.4 inches (1975) to 17.8 inches (1995). Precipitation is greatest from late spring to early fall, with the peak monthly average of 1.35 inches occurring in May. An average of 30.9 inches of snow falls during the year (annual high 43.6 inches in 1987), with heaviest monthly snowfalls occurring in December and January. Table 3-3 shows the mean monthly temperature ranges and average precipitation amounts.

Temperatures are generally cooler, frost-free periods shorter, and both precipitation and snowfall greater at higher elevations. The region is typically cool, with average daily temperatures (in degrees Fahrenheit; °F) ranging between –1 °F (low) and 32 °F (high) in mid winter and between 42 °F (low) and 79 °F (high) in mid summer. Extreme temperatures have

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ranged from –52 °F (occurring in 1990) to 95 °F (occurring in 1973). The frost-free period (above 32 °F) generally occurs from early June to mid-September.

The project area is subject to strong and gusty winds, reflecting channeling and mountain valley flows due to complex terrain. During the winter months, strong winds are often accompanied by snow, producing blizzard conditions and drifting snow. The closest comprehensive wind measurements are collected by Amoco Corporation in the Jonah Field, approximately 40 miles southeast of Pinedale, Wyoming in Sublette County. Figure 3-1 shows the relative frequency of winds, with radial distributions by speed class, indicating the direction of the wind source. From this information, it is evident that the winds originate from the northwest nearly 40 percent of the time. The annual mean wind speed is nearly 12 mph.

Table 3-3. La Barge, Wyoming, 1958-Present Mean Monthly Temperature Ranges and Average Precipitation Amounts.

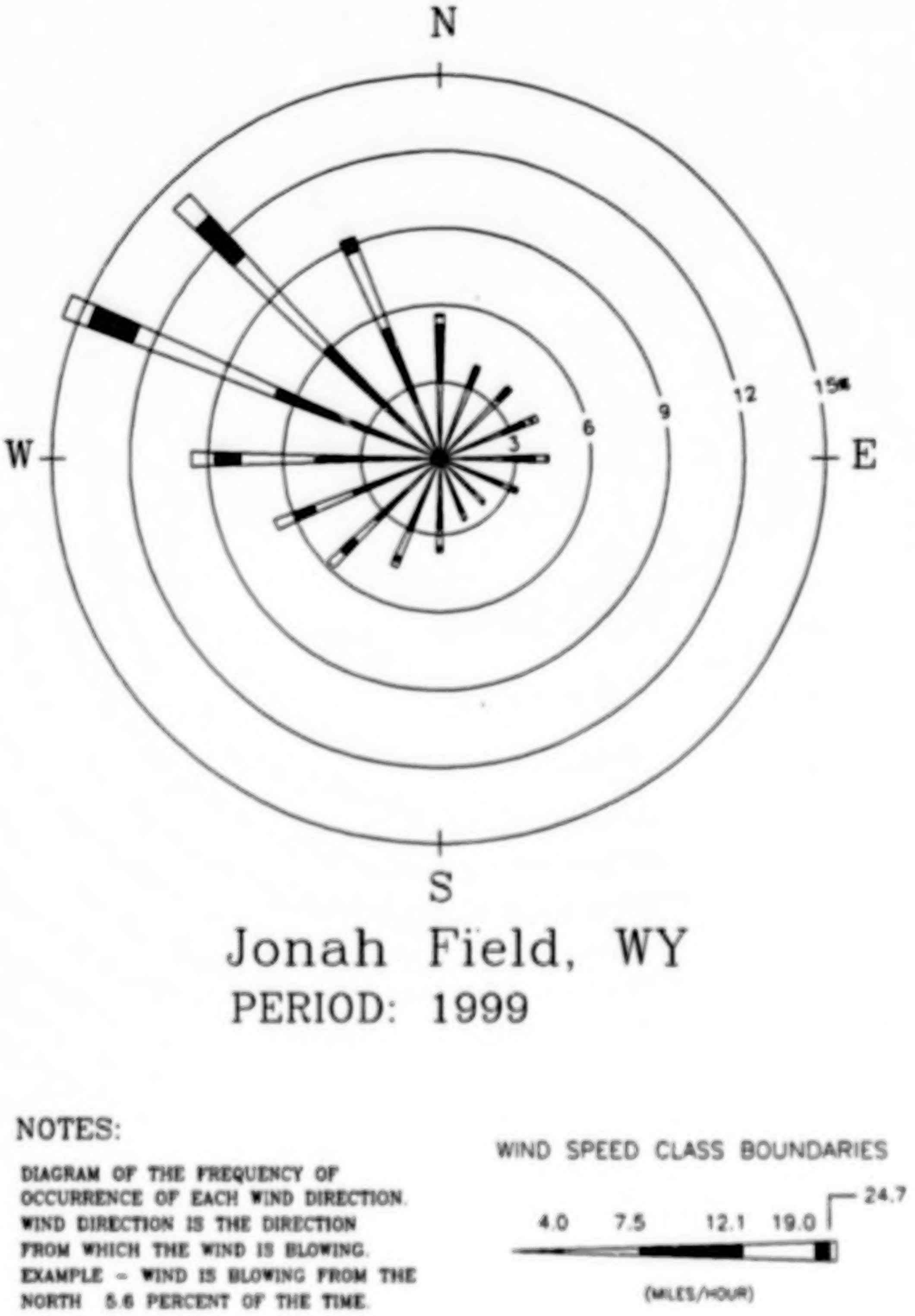
Month	Average Temperature Range (°F)	Average Precipitation (inches)	Average Snowfall (inches)
January	-2 - 31	0.3	6.2
February	1 - 35	0.4	4.4
March	14 - 43	0.4	4.0
April	23 - 54	0.8	2.8
May	32 - 65	1.4	1.3
June	39 - 73	1.1	0.0
July	44 - 83	0.7	0.0
August	42 - 82	0.9	0.0
September	33 - 71	0.8	0.1
October	22 - 59	0.6	1.7
November	11 - 42	0.5	4.3
December	-1 - 31	0.5	6.0
ANNUAL	38.6 (mean)	8.3 (mean)	30.9 (mean)

Source: (WRCC 2001)

The frequency and strength of the winds greatly affects the dispersion and transport of air pollutants. Because of the strong winds in the project area, the potential for atmospheric dispersion is relatively high (although nighttime cooling would enhance stable air, inhibiting air pollutant mixing and transport).

Tables 3-4 and 3-5 show the frequency distribution of wind speed and atmospheric stability class in the Jonah Field. The atmospheric stability class is the measure of atmospheric turbulence, which directly affects pollutant dispersion. The stability classes are divided into six categories designated "A" (unstable) through "F" (stable). The "D" (neutral) stability class

Figure 3-1. Wind Rose for the Bird to Opal Pipeline Analysis Area.



NOTES:

DIAGRAM OF THE FREQUENCY OF OCCURRENCE OF EACH WIND DIRECTION. WIND DIRECTION IS THE DIRECTION FROM WHICH THE WIND IS BLOWING. EXAMPLE – WIND IS BLOWING FROM THE NORTH 5.6 PERCENT OF THE TIME.

Table 3-4. Wind Speed Distribution.

Wind Speed (miles/hour)	Percent of Occurrence
0-4.0	7.4
4.0-7.5	26.3
7.5--12.1	29.3
12.1-19.0	23.9
19.0-24.7	7.5
Greater than 24.7	5.5

Table 3-5. Stability Class Distribution.

Stability Class	Percent of Occurrence
A	2.6
B	6.4
C	11.2
D	59.0
E	17.4
F	3.3

occurs more than half of the time.

3.2.2 Air Quality

Although specific air quality monitoring is not conducted throughout most of the project area, air quality conditions are likely to be very good, as characterized by limited air pollution emission sources (few industrial facilities and residential emissions in the relatively small communities and isolated ranches) and good atmospheric dispersion conditions, resulting in relatively low air pollutant concentrations. The Wyoming and National Ambient Air Quality Standards set absolute upper limits for specific air pollutant concentrations at all locations where the public has access. The New Source Review-Prevention of Significant Deterioration (PSD) Program is designed to limit the incremental increase of specific air pollutant concentrations above a legally defined "baseline" level (depending on the location's classification). Incremental increases in PSD Class I areas are strictly limited, while increases allowed in Class II areas are less strict. The Bird to Opal Pipeline project area and the surrounding areas are classified as PSD Class II. The two closest PSD Class I areas, the Bridger and Fitzpatrick Wilderness Areas, could be impacted by cumulative project source emissions. These Wilderness areas lie over 45 miles to the northeast of the pipeline project area.

All National Environmental Policy Act (NEPA) analysis comparisons to the PSD Class I and II increments are intended to evaluate a "threshold of concern," and do not represent a regulatory "PSD Increment Consumption Analysis." The determination of PSD increment consumption is an air quality regulatory agency responsibility (with EPA oversight). Such an analysis would be conducted as part of a major New Source Review, including a Federal Land Management Agency's evaluation of potential impacts to Air Quality Related Values (AQRV) such as visibility, aquatic ecosystems, flora, fauna, etc. A "PSD Increment Consumption Analysis" may also be performed by the responsible air quality regulatory agency (or by EPA) in order to determine minor source increment consumption.

While no criteria air pollutant concentration monitoring has occurred in the project area, background values measured in the region are well below established standards. Measured air pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), ozone, particulate matter less than 10 microns in effective diameter (PM-10), and sulfur dioxide (SO_2). Assumed background air pollutant concentrations, applicable Wyoming and National Ambient Air Quality Standards, and PSD Class I and II increments (measured in micrograms per cubic meter, or $\mu g/m^3$) are provided in Table 3-6.

All background concentration data have been identified by WDEQ-AQD as the most representative air quality monitoring data available for the region. An estimate of background air quality concentrations is needed not only to determine existing air quality conditions but to combine with modeled project-related air quality impacts for comparison to applicable air quality standards. It is important that each pollutant's background concentration, model predictions, and air quality standards are based on the same averaging times.

Continuous visibility-related optical background data have been collected at the PSD Class I Bridger Wilderness Area in Wyoming, as part of the Interagency Monitoring of PROtected Visual Environments (IMPROVE) program. Visibility in the Central Rocky Mountains is very good (averaging over 70 miles Standard Visual Range), with fine particle impacts accounting for nearly half of the average degradation (Sisler 1996). In addition, a background atmospheric deposition (acid rain) monitoring system is in place at the National Acid Deposition Program/National Trends Network sampling station near Pinedale, Wyoming, and site-specific lake chemistry (pH, acid neutralizing capacity, elemental concentrations, etc.) monitoring is conducted by the U.S. Geological Survey Water Quality Division in several high mountain lakes in regional wilderness areas.

The WDEQ-AQD, under their EPA approved State Implementation Plan, is the primary air quality regulatory agency responsible for determining potential impacts once detailed industrial development plans have been made, and those development plans are subject to applicable air quality laws, regulations, standards, control measures, and management practices. Therefore, WDEQ-AQD has the ultimate responsibility for reviewing and permitting the project prior to its operation. Unlike the conceptual "reasonable, but conservative" engineering designs used in NEPA analyses, any WDEQ-AQD air quality preconstruction permitting demonstrations required would be based on very site-specific, detailed engineering values, which would be assessed in the permit application review.

Table 3-6. Air Pollutant Background Concentrations, State and Federal Ambient Air Quality Standards, and PSD Increments (µg/m^3).

Pollutant/Averaging Time	Measured Background Concentration	State and National Ambient Air Quality Standards	Incremental Increase Above Legal Baseline PSD Class I	Incremental Increase Above Legal Baseline PSD Class II
Carbon Monoxide (CO)				
1-hour	3,336 [a]	40,000	n/a	n/a
8-hour	1,381 [a]	10,000	n/a	n/a
Nitrogen Dioxide (NO_2)				
Annual	3.4 [b]	100	2.5	25
Ozone				
1-hour	169 [c]	235	n/a	n/a
8-hour	147 [c]	157		
Particulate Matter (PM_{10})				
24-hour	47 [d]	150	8	30
Annual	16 [d]	50	4	17
Sulfur Dioxide (SO_2)				
3-hour (National)	132 [e]	1,300	25	512
24-hour (National)	43 [e]	365	5	91
24-hour (Wyoming)	43 [e]	260	n/a	n/a
Annual (National)	9 [e]	80	2	20
Annual (Wyoming)	9 [e]	60	n/a	n/a

Notes: n/a - not applicable

Wyoming Ambient Standards from: Wyoming Air Quality Standards and Regulations, Chapter 2– Ambient Standards

National Ambient Standards from: 40 CFR Part 50

PSD Increments from: 40 CFR Part 52 Subpart A 52.21 Prevention of Significant Deterioration of Air Quality.

Background Air Quality Data Sources:

[a] Data collected by Amoco at Ryckman Creek for an 8-month period during 1978-1979, summarized in the Riley Ridge EIS (BLM, 1983).

[b] Data collected at Green River Basin Visibility Study site, Green River, Wyoming during period January-December, 2001 (ARS, 2002).

[c] Data collected at Green River Basin Visibility Study site, Green River, Wyoming during period June 10, 1998 through December 31, 2001 (ARS, 2002).

[d] Data collected by WDEQ at Emerson Building, Cheyenne, Wyoming, 2002.

[e] Data collected at LaBarge Study Area at the Northwest Pipeline Craven Creek site (1982-1983).

3.3 SOILS

Soils information for this project were derived from the Soils and Water Resources Technical Report for the Moxa Arch Area (BLM 1995d), the Fontenelle Natural Gas Infill Drilling Projects, Sweetwater and Lincoln Counties, Wyoming, Draft EIS (BLM 1995a), the Slate Creek Soil Survey (BLM 1991), and the Soil Survey of Sweetwater County (Natural Resources Conservation Service n.d.).

3.3.1 Northern Terminus (NENW of Section 34, T27N, R111W) to Dodge Rim (SWNW of Section 33, T22N, R111W)

This segment of the pipeline project crosses rolling uplands dominated by soils with hard fractured sandstone, usually within 24 to 36 inches of the surface. Some areas have sandstone gravel to the surface. Sandstone outcrops occur, especially on slope breaks. Swales and drainages between uplands usually have deep soils with no rock fragments above 60 inches. Due to sand content, many of these soils are subject to accelerated wind erosion when vegetation is removed. Topsoil can be salvaged for a depth of 6 to 12 inches, depending on the depth to rock fragments.

Soils in the Green River flood plain usually lack rock fragments near the surface. Topsoil can be salvaged to a depth of at least 12 inches. On the south side of the river, alluvial fans in Sections 21 and 28, T23N, RI11W, off Dodge Rim are dominated by soils with gravels within 12 inches of the surface and are loaded with carbonates. These carbonate-rich soils are usually not cemented, but caliche may appear in some areas.

3.3.2 Opal to Dodge Rim

The segment of the ROW from Opal east to Dodge Rim (SWNW of Section 34, T22N, RIIIW) is characterized by soils found on remnant terraces or mesas dissected by drainages, soils on side slopes and dissected fans, and soils found on saline flood plains.

In general, the remnant terrace soils have gravels and cobbles within 12 to 18 inches of the surface and have high concentrations of carbonates below the surface horizon. This carbonate layer is usually not cemented, although caliche may be found in some areas. Depth to shale or sandstone bedrock is usually below 60 inches. These gravelly calcareous soils dominate Opal Bench and Dodge Rim. Isolated areas of sand dunes are found on these benches. Topsoil depth ranges from 6 to 18 inches, depending on the depth to rock fragments.

The ROW crosses steep slopes with shallow soils surrounding these terraces in the SWSW of Section 18, T21N, RI13W, and the SESW of Section 26, T22N, RI12W, on Opal Bench and the SENE of Section 6, T22N, R111W, on Dodge Rim. These steep slopes, which are 50 to 200 yards long, have minimal soils development or vegetative cover, as is the case on the west end of Opal Bench, and are very susceptible to water erosion. Topsoil on these slopes is negligible and salvage determinations should be made on the site.

Dissected fans surround the uplands and are characterized by well-drained soils of varying textures, depth to bedrock, and salinity content. Due to high salt content, many of these soils are highly susceptible to water erosion and internal piping with subsequent subsidence. Topsoil can be salvaged from 6 to 12 inches. Isolated areas of sand dunes occur in these areas.

Small portions of the ROWs cross low fans and flood plains characterized by silty clay soils with high salinity and alkalinity as are found in the NESE of Section 26, T22N, RI12W, and the SWSW of Section 7, T22N, RIIIW at Shute Creek. These soils have low bearing strength and when wet, are impassable. Depth to shale bedrock is usually below 60 inches. Topsoil can be salvaged to about 6 inches.

Drainage crossings such as Craven Creek in the NWNE of Section 24, T21N, RI14W; Cow Hollow Creek in the SENW of Section 10, T21N, R113W; and Shute Creek in the SWSW of Section 7, T22N, R111W, have narrow riparian areas, often with steep near-vertical banks. Breaches in these banks often result in access points for livestock and vehicles, leading to soil compaction, increased runoff, and accelerated erosion.

3.4 WATER RESOURCES

Detailed discussions of surface and ground water throughout the project area can be found in the Green River Resource Area RMP EIS (BLM 1992, 1996a), Kemmerer RMP EIS (BLM 1985a, 1985b), Fontenelle Natural Gas Infill Drilling Projects EIS (BLM 1995a), and the EIS for the Expanded Moxa Arch Area Natural Gas Development Project (BLM 1995b).

3.4.1 Surface Waters

The major surface water resource along the proposed pipeline route is the Green River, a major tributary of the Colorado River. The Green River in the vicinity of the proposed pipeline crossing is listed as a monitoring stream in the 2000 Wyoming Section 303(d) Master File and not as impaired waters. The WDEQ/WQD classifies both of these river sections as Class 2–cold water game fisheries. Other surface water resources include numerous intermittent, ephemeral and perennial streams, livestock ponds, and seeps and springs (BLM 1995b).

Streams both north and south of the Green River and Fontenelle Reservoir are sensitive to channel disturbance and to increases in surface runoff and/ or tributary inflow and sediment (BLM 1995b). Stream bank erosion potential is high to very high, and recovery potential ranges from very poor to good, depending on stream type.

3.4.2 Ground Water

The proposed pipeline would disturb only the upper 5 to 10 ft of soils. Deeper, water-bearing formations would not be affected and are therefore not discussed further.

3.5 VEGETATION/RIPARIAN AREAS

3.5.1 Vegetation

Vegetation near the proposed pipeline route is typical of the Green River Basin, where plant production, distribution, and species composition are controlled by precipitation, available water, and soil limitations. In this semi-arid region, drought-, salt-, and alkaline-tolerant species dominate the landscape except along perennial watercourses and at other locations where more water is available (BLM 1995b, 1996b). Vegetation consists primarily of mixed desert shrubs (such as sagebrush, rabbitbrush, saltbush, and greasewood), with grasses and forbs (such as thickspike wheatgrass, needle-and-thread grass, Sandberg blue grass, snakeweed, and cushion plant communities) in the under story. Cottonwoods and willows are found in the riparian areas along the Green River (BLM 1985a, 1995a, 1996a, 1996c).

Extensive discussions of vegetation communities along the proposed pipeline route are presented in the Green River Resource Area RMP EIS (BLM 1992, 1996a), Kemmerer RMP EIS (ELM 1985a, 1985b), Fontenelle Natural Gas Infill Drilling Projects EIS (BLM 1995a), and the EIS for the Expanded Moxa Arch Area Natural Gas Development Project (BLM 1995b).

3.5.2 Riparian Areas

Riparian areas, protected under Executive Order (EO) No.11990, and wetlands, protected under Section 404 of the Clean Water Act (33 CFR 1251 et seq.), are considered sensitive and valuable resources. Formal wetland delineations were not performed, but potential wetlands along the proposed pipeline route were identified from National Wetlands Inventory maps (USFWS 1989, 1991).

Other than the potential wetlands associated with the Green River, potential wetlands along the proposed pipeline route are either excavated areas likely used as stock ponds or crossings of intermittent or ephemeral drainages. South of the Bird Canyon Compressor Station, the proposed pipeline first crosses an unnamed drainage south of Anderson Canyon in the SE/4 of Section 22, T25N, R111W. Further south and east of Fontenelle Reservoir, the proposed route crosses another drainage in the SE/4 of Section 27, T24N, R111W. Both of these drainages are classified as riverine intermittent streambeds that are temporarily flooded. Wetlands have been identified east of the Green River crossing. Because the proposed pipeline would cross the river either between existing pipelines or to the west of them, and JGGC plans to bore under the river, no additional wetland disturbance is anticipated at the crossing.

The proposed pipeline route west to Opal would cross an excavated palustrine semipermanently flooded area in the W1/2 of Section 7, T22N, R111W, and a less than one acre temporarily flooded and diked palustrine area in the E1/2 of Section 23, T21N, R114W. It would also cross two intermittent seasonally flooded riverine areas: Cow Hollow Creek in the NW of Section 10, T21N, R113W, and Craven Creek off the Ham's Fork in the NE of Section 24, T21N, R114W.

3.5.3 Invasive/Noxious Weeds

The area that includes the Bird to Opal Pipeline project is vulnerable to infestations of invasive/noxious weeds such as Canada thistle, musk thistle and black henbane. Any newly disturbed surface within the project area would be susceptible to infestations of invasive/noxious weeds, particularly the species listed above. Monitoring for weed infestations and spraying for two consecutive seasons, after emergence but before seeding, has been an effective method of controlling these species.

3.6 SOCIOECONOMICS/ENVIRONMENTAL JUSTICE

3.6.1 Socioeconomics

Counties and communities potentially affected by the Proposed Action include Sublette, Lincoln and Sweetwater counties and the communities of La Barge, Kemmerer, Diamondville and Fontenelle. Potentially affected socioeconomic conditions include temporary housing resources, emergency management services and local government tax revenues.

According to the year 2000 census, Sublette County had a population of 5,920, Lincoln County had 14,573 and Sweetwater County had 37,613. Each county has substantial existing oil and gas development; the Sweetwater County community of Rock Springs serves as the regional oil and gas service center for southwestern Wyoming.

There are several motels in the Lincoln County town of La Barge, which is located near the north end of the proposed pipeline. A substantial number of motels and recreational vehicle (RV) parks are located in the Kemmerer/Diamondville area (also in Lincoln County) which is located toward the southern end of the proposed pipeline. There is a small campground in the community of Fontenelle. Emergency response services (fire, ambulance, law enforcement) are located in both La Barge and Kemmerer/Diamondville, and hospital services are available in Kemmerer.

Oil and gas facilities such as pipelines and compressors stations are assessed ad valorem property taxes based on 11.5 percent of the value of the facilities. Projects also pay sales and use taxes on tangible goods sold or used. The Wyoming statewide property tax is four percent, counties may levy up to an additional two percent based on voter approval.

3.6.2 Environmental Justice

Executive Order (EO) 12898, "Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations" was published in the *Federal Register* (59 FR 7629 on February 11, 1994. EO 12898 requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations (defined as those living below the poverty level). The Executive Order makes clear that its provisions apply fully to American Indian populations and Indian tribes, specifically to affects on tribal lands, treaty rights, trust responsibilities, and the health and environment of Indian communities.

Environmental Justice concerns are usually directly associated with impacts on the natural and physical environment but these impacts are likely to be interrelated to social and economic impacts as well. There are no communities immediately adjacent the proposed pipeline or ancillary facilities.

Native American access to cultural and religious sites may fall under the umbrella of environmental justice concerns if the sites are on tribal lands or access to a specific location has been granted by treaty right. With regard to environmental justice issues affecting Native American tribes or groups, the project area contains no tribal lands or Indian communities, and no treaty rights or Indian trust resources are known to exist for this area.

3.7 CULTURAL RESOURCES

Cultural resources, the nonrenewable remains of past human activity, are protected under the National Historic Preservation Act of 1966 and the Archaeological Resource Protection Act of 1979. Archaeological investigations in the Green River Basin indicate that the area has been used by prehistoric people for at least 10,000 years, from Paleoindian times to the present (BLM 1995b). The archaeological record of the area has been established through surveys, test excavations, data recovery excavations, a limited amount of ethnographic material pertaining to the extant Native American populations at the time of Euro-American contact, and historic documents pertaining to the settlement and use of the area by Euro-Americans. Historically, the project area has been used for trapping, ranching, sheep herding, and as a travel corridor west via the Oregon and California National Historic Trails. More detailed descriptions of the cultural resources in the project area are presented in the Green River Resource Area RMP EIS (BLM 1992, 1996a), Kemmerer RMP EIS (BLM 1985a, Fontenelle Natural Gas Infill Drilling Projects EIS (BLM 1995a), and the EIS for the Expanded Moxa Arch Area Natural Gas Development Project (BLM 1995b).

A Class III cultural resource inventory was conducted on the proposed pipeline corridor in the fall, 2002. The inventory resulted in the identification of 49 previously recorded sites and the identification, recordation and evaluation of two new sites.

Cultural clearance is recommended for the proposed Jonah Gas Gathering Company, Bird to Opal Pipeline. This undertaking would impact a total of 51 sites, but the area of impact is restricted to non-contributing portions of significant sites or non-eligible sites. Because cultural resources that are not eligible for nomination to the National Register of Historic Places are not considered "historic properties," then by the Advisory Council's guidelines for Section 106 compliance there would be no adverse effect on any historic properties by the construction or maintenance of the proposed pipeline.

3.8 NOISE

Noise in the vicinity of the proposed pipeline route is primarily from wind; traffic on U.S. 30 and other paved, unpaved, and two-track roads; and jet aircraft overflights at high altitudes. Noise-sensitive areas include residences, recreation sites, occupied raptor nests, active sage grouse leks, and pronghorn antelope crucial winter range during crucial winter periods.

3.9 VISUAL RESOURCES

The proposed pipeline route crosses three Visual Resource Management (VRM) sensitivity classes (Classes II, III, and IV). Most of the pipeline route would be in Class IV VRM areas. The pipeline would cross Class II and Class III VRM areas along the Green River. The objective of Class II is to retain the existing character of the landscape. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the landscape. The Class III objective is to partially retain the existing character of the landscape. Projects in these areas may draw a casual observer's attention, but they should not dominate the landscape. The objective of Class IV areas is to provide for management activities requiring major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high, and management activities may dominate the view; however, the change should repeat the basic elements (form, line, color, and texture) of the surrounding landscape.

3.10 WILDLIFE AND FISHERIES

Detailed accounts of the wildlife and fish that inhabit areas along the proposed pipeline route can be found in the Green River and Kemmerer RMPs (BLM 1996a, 1985a) and the Jonah Field II, Fontenelle, and the Moxa Arch EISs (BLM 1997c, 1995a, 1995b). Additionally, resource inventory maps are provided in this assessment and the environmental analysis completed on the existing Bird-Canyon-Opal Pipeline (Environmental Assessment and Finding of No Significant Impact for the Bird Canyon-Opal Pipeline, Granger Spur Pipelines, and One Compressor Station, Sublette, Sweetwater, and Lincoln Counties, Wyoming, BLM 1999).

3.10.1 Big Game

Four big game species--pronghorn antelope, mule deer, elk, and moose--occur near the proposed pipeline route. The WGFD manages these animals in major herd units.

3.10.1.1 Pronghorn

Pronghorn belonging to the Sublette (north of Route 30) herd inhabit areas along the proposed pipeline route. The pipeline would pass through pronghorn crucial winter /year long range as shown on Figure 3-2.

3.10.1.2 Mule Deer

Mule deer along the proposed pipeline route belong to the Sublette (north of the Green River, west and north of Sweetwater County Road 49), Steamboat (north of the Green River, east and south of Road 49), and Wyoming Range (south of the Green River) herds. The pipeline would cross mule deer migration routes and winter /year long range, but no crucial winter range occurs along the route (Figure 3-2).

3.10.1.3 Elk

Elk from the Pinedale (north of the Green River) and West Green River (south of the Green River) herds inhabit areas along the proposed pipeline route. South of the Green River, pipeline route crosses severe winter relief range which is only used during extreme weather conditions when preferred, higher quality winter range is not available. The proposed pipeline would disturb approximately 51 acres of elk severe winter relief range. No crucial winter range for elk exists along the proposed pipeline (see Figure 3-3).

3.10.1.4 Moose

Moose from the Sublette (north of the Green River) and Lincoln (south of the Green River) herds occur along the proposed pipeline route. There is winter/year long range along the Green River, but no crucial range occurs along the route (see Figure 3-3).

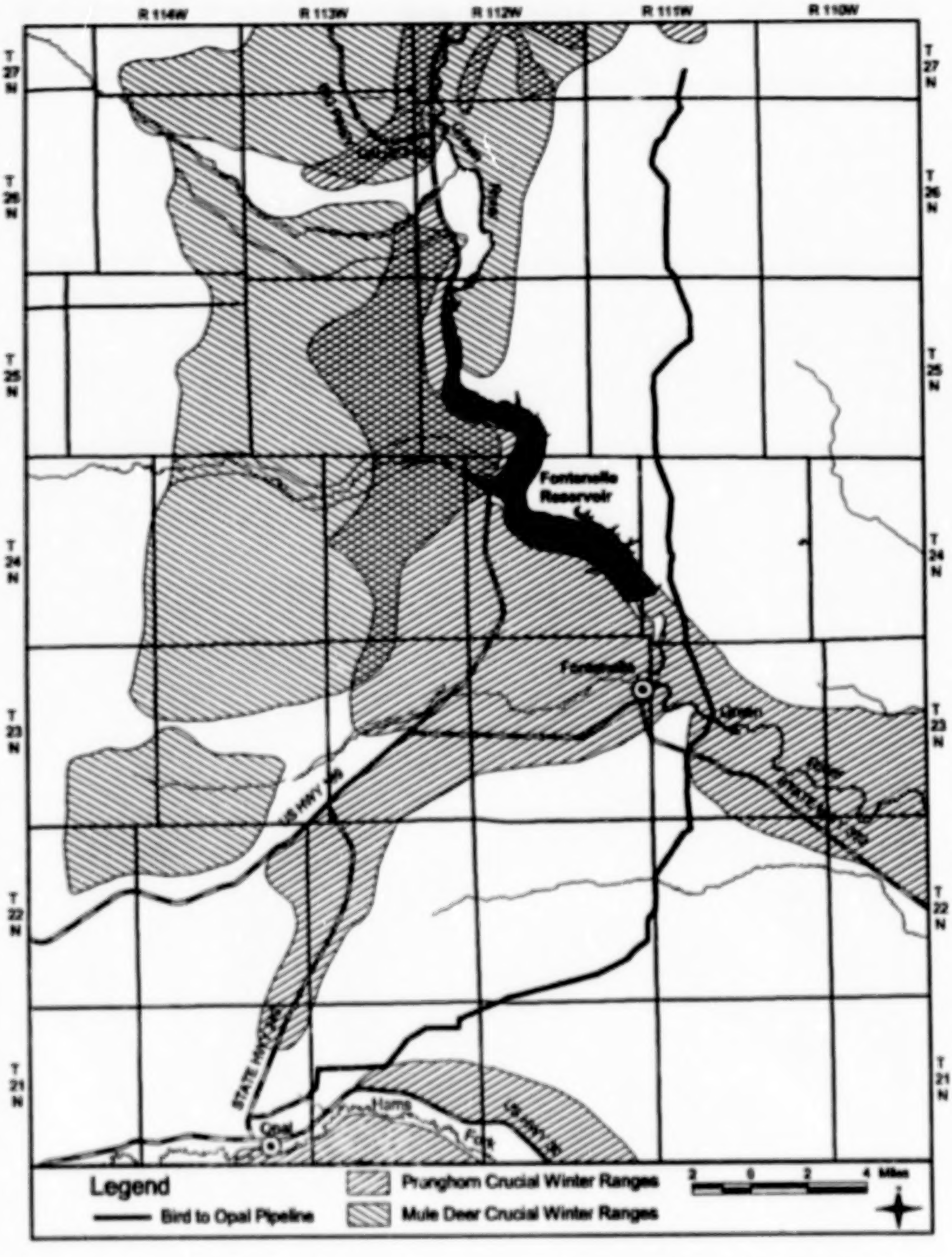


Figure 3-2. Pronghorn and Mule Deer Crucial Winter Ranges Located Near the Bird Canyon to Opal Pipeline.

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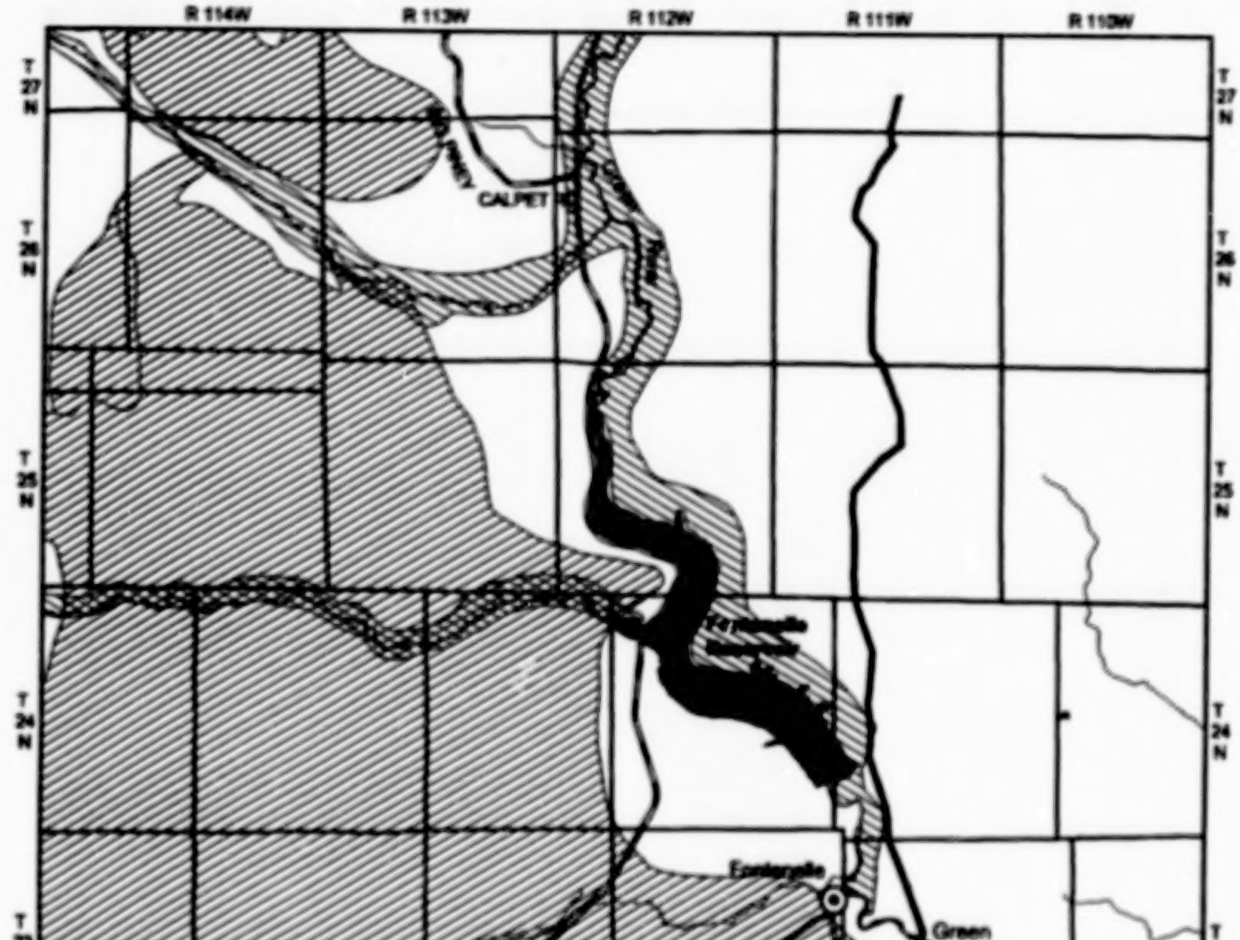

Figure 3-3. Elk and Moose Crucial Winter Ranges Located Near the Bird Canyon to Opal Pipeline.

65

3.10.2 Raptors

A number of raptors nest on the cliffs, bluffs, and trees adjacent to the Green River and on rocky outcrops in the large canyons above the river (Figure 3-4). Golden eagle, red-tailed hawk, ferruginous hawk, and great horned owl are known to nest in the vicinity of the proposed pipeline route. Bald eagle, Swainson's hawk, northern harrier, prairie falcon, American kestrel, merlin, and osprey also may occasionally nest in the area. Other raptor species may frequent the area during the summer months, including sharp-shinned hawk, Cooper's hawk, northern goshawk, and long-eared owl. Although most nesting birds migrate south during the winter, golden eagles and great horned owls may remain all year. Rough-legged hawks may occupy the area during winter, but tend to move north to breed in the spring. From November through February, bald eagles roost in cottonwood trees along the Green River, especially in Seedskadee National Wildlife Refuge.

There is suitable raptor nesting and roosting habitat in the vicinity of the Green River crossing, but no nests or roosts were observed within 0.5 mi of the crossing during a field inspection (Dunder 2003).

3.10.3 Upland Game Birds

3.10.3.1 Mourning Dove

Mourning doves breed, nest, and roost during spring and summer in shrubby areas along perennial water sources, washes, and dunes in the vicinity of proposed pipeline route. Doves migrate from the area in fall and winter.

3.10.3.2 Sage Grouse

Sage grouse are the predominant game bird in southwestern Wyoming, and the area of the proposed pipeline contains some of the highest concentrations of these birds in the state (BLM 1995b). Important habitat components for sage grouse are leks and nesting areas, brood-rearing areas, and wintering areas. Sage grouse usually nest on the ground under sagebrush 15 to 22 inches tall and depend on sagebrush canopy cover for nest concealment (BLM 1995a). A number of sage grouse leks and nesting areas occur along the proposed pipeline route (Figure 3-4).

3.10.4 Other Wildlife

Numerous other small mammals, birds, amphibians, and reptiles occur in project area. Wading/shorebirds and waterfowl occur along the Green River. Lists of these wildlife species can be found in the Fontenelle and Jonah II EISs (BLM 1995a, 1997c).

3.10.5 Fisheries

The Green River below the Fontenelle Dam is a Class 2 trout fishery--a fishery of statewide importance (WGFD 1991). The river supports brown, rainbow, and cutthroat trout, as well as Kokanee salmon, which spawn in October downstream of the dam (BLM 1995a). Most of the remaining drainages along the pipeline route are ephemeral or intermittent and are unable to support sustainable fish populations due to insufficient flow (BLM 1995b).

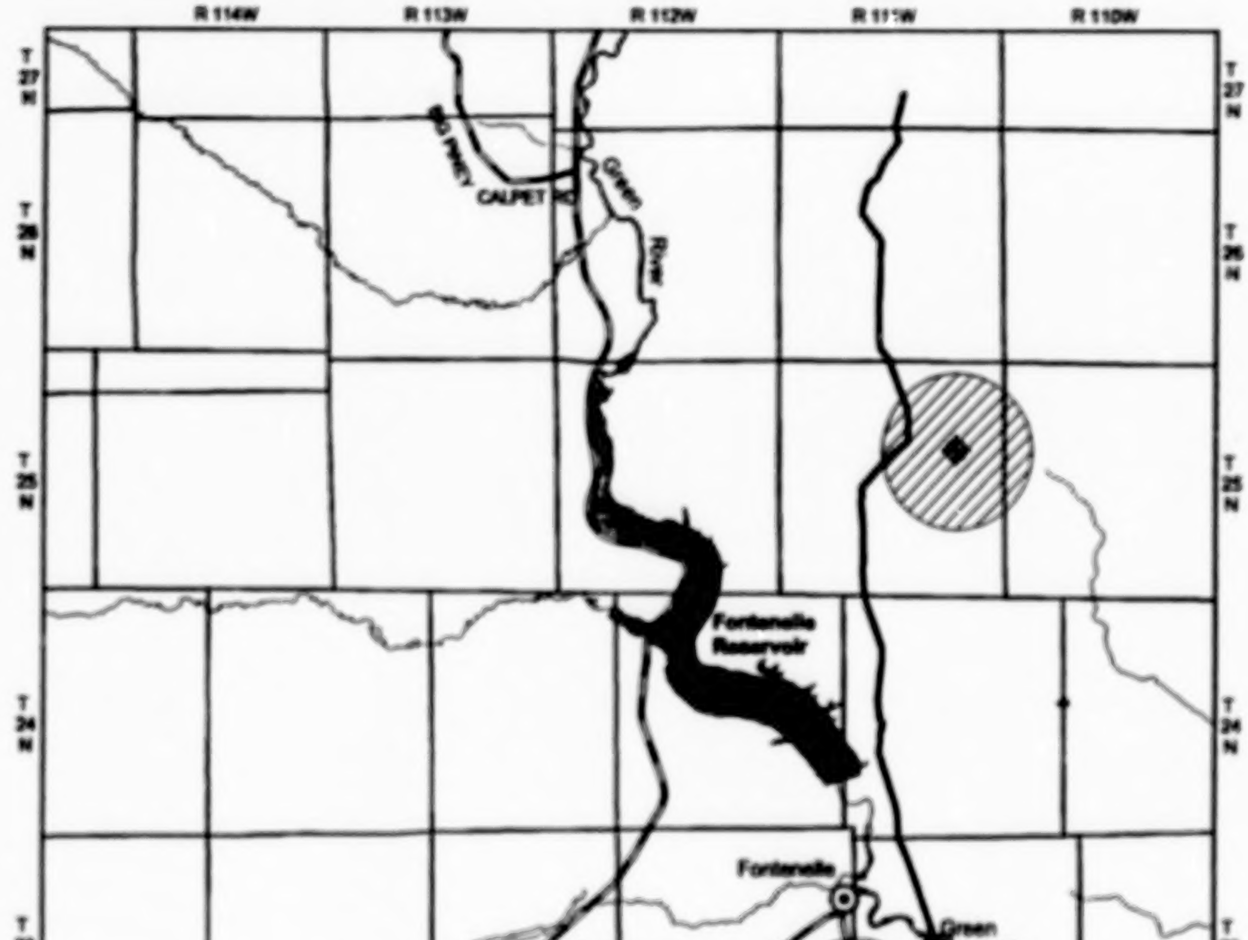

Figure 3-4. Greater Sage-Grouse Leks and Nesting Habitat, and Raptor Nests Located Near the Bird Canyon to Opal Pipeline.

3.11 THREATENED, ENDANGERED, CANDIDATE, AND SENSITIVE ANIMAL AND PLANT SPECIES

The Endangered Species Act 011973 (ESA) protects federally listed T&E animal and plant species and their critical habitats. Species that are federal candidates for listing as T&E are not protected under the ESA, but are provided protection by the BLM under the guidelines of BLM Manual Section 6840. Under these regulations, the BLM is directed to ensure that actions authorized, funded, or carried out by the agency do not contribute to the need to list these species as T&E. The USFWS was contacted to initiate informal Section 7 consultation and obtain a list of T&E species potentially present in the project areas (Long 2003). In addition, observation records of sensitive species were obtained from the Wyoming Natural Diversity Database (WYNDD) for areas along and adjacent to the pipeline route (WYNDD 2003).

T&E listed and proposed animal and plant species listed by the USFWS that may occur in the vicinity of the proposed pipeline route are Black-footed ferret, Gray wolf, Canada lynx, Grizzly bear, Kendall Warm Springs dace, Bald eagle, Ute ladies'- tresses, Mountain plover, and Colorado River fish (Long 2003).

3.11.1 Black-footed Ferret

White-tailed prairie dog colonies constitute potential habitat for black-footed ferrets. Ferrets prey on prairie dogs for food and use their burrows for shelter and raising young. No active colonies were found along the proposed pipeline route north of the Green River and west of the Moxa Arch Analysis Area in Sections 9,16, 17, and 18, T21N, RI13W, and Sections 13, 22, 23, and 24, T21N, RI14W, during field inspections on October 23, 1998 (Dunder 2003). However, several colonies do occur along proposed route within the Moxa Arch Analysis Area (BLM 1995b; Herren 1998). The USFWS requires that ferret surveys be conducted if proposed construction activities would disturb portions of prairie dog colonies or complexes (Long 2003). The proposed pipeline would pass through seven white-tailed prairie dog colonies, all of which are included in a greater complex (BLM 1995b). BLM (Dunder 2003) considers existing White-tailed prairie dog survey data north of the Green River as being current. However, Black-footed ferret surveys would be required for those habitats meeting the minimum USFWS Black-footed ferret habitat definition. A Black-footed ferret survey was completed for a large prairie dog town in Section 26, T22N, R112W in September 2002, with negative results (Dana, 2002).

3.11.2 Gray Wolf

Habitats suitable for the gray wolf do not occur on the project area, which lies well outside of the Wolf Recovery Zone in Wyoming. Gray wolves are not expected to occur in the vicinity of the project area.

3.11.3 Canada Lynx

The Canada lynx in Wyoming occurs in extensive tracts of dense coniferous forest, primarily dominated by Englemann spruce and subalpine fir. These habitats are typically found in the high mountainous regions of western Wyoming. As of 1996, the WOS contained only 14 lynx records. Habitat in the project area (primarily sagebrush steppe) is not suitable for consistent long-term use by lynx. Canada lynx was last observed in the general vicinity of the pipeline route in the mid-1970s.

3.11.4 Grizzly Bear

The project area does not provide habitat that could be considered grizzly bear habitat and lies well outside of the Grizzly Bear Recovery Zone in Wyoming. Grizzly bears are not expected to occur in the vicinity of the project area.

3.11.5 Kendall Warm Springs Dace

The distribution and occurrence of the Kendall Warm Springs Dace in Wyoming is limited to Kendall Warm Springs in Sublette County. These springs are located well north of the project area in the Bridger-Teton National Forest.

3.11.6 Bald Eagle

A portion of the proposed pipeline is adjacent to a bald eagle foraging, potential nesting, and roosting area within the Seedskadee National Wildlife Refuge. The Green River crossing would be within 1 mile of an eagle nest that was last active in 1995. The nest site itself, however, is not observable from the crossing. No nesting activity was noted at the eagle nest in a survey conducted by BLM in April, 2003 (Dunder 2003).

3.11.7 Ute Ladies' Tresses

Marginal habitat for the threatened Ute ladies' tresses was observed at the Green River crossing during field inspection on November 16, 1998. Soils in the vicinity of the crossings generally are clay/alkaline with some lowland grasses. Ute ladies' tresses has the potential to occur in flood plains, abandoned stream channels, and meanders on permeable materials where soils are saturated to within 18 inches of the surface, at least temporarily during the spring or summer. This plant generally occurs below 7,000 ft in elevation. Populations in Montana and Wyoming are known to occur in alkaline soil (personal communication, January 1999, with Walt Fertig, Wyoming Natural Diversity Database; Heidel 1997).

3.11.8 Mountain Plover

The animal species proposed for listing that may occur in sagebrush and grasslands within the project area is the mountain plover (Long 2003).

A mountain plover survey was completed along the proposed Opal Loop Pipeline on May 6, 2001. Nearly all of the survey area was dominated by sagebrush. Very little potential plover habitat was found and no plovers were heard or seen during the survey. Approximately 1.5 miles of the alignment passed through good potential plover habitat in Sections 24 and 25, T22N, R112W near two main roads that sustained heavy traffic. Several other patches of marginal habitat occurred about one mile north of the Green River.

Only three percent of the pipeline corridor passes through habitats flat enough, and with short enough vegetation to provide potential plover habitat. However this one short patch of good plover habitat is unlikely to be used by plovers because of it's proximity to heavily traveled roads. Because there is very little potentially suitable habitat and the fact that no plovers were found during the survey, the placement of a pipeline within this corridor is not expected to reduce the breeding potential for this species. Even in the unlikely event that the surveyors missed a plover on a nest, the late start-up date for construction (July 10 or later) insures that young plovers would be hatched and flying before earth-disturbing events occur.

3.11.9 Colorado River Fish

Four federally endangered fish species may occur as downstream residents of the Green River system: bonytail, Colorado pikeminnow, humpback chub, and razorback sucker (USDI-FWS 2002a). Though they currently exist only downstream of the project area, water from the Colorado River drainage will be needed for the proposed action, which potentially could affect the downstream habitat for these species. Under the Recovery and Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (RIP), "any water depletions from tributary waters within the Colorado River drainage are considered as jeopardizing the continued existence of these fish." Tributary water is defined as water that contributes to instream flow habitat. Depletion is defined as water which would contribute to the river flow if not intercepted and removed from the system.

The FWS has determined that progress made under the RIP has been sufficient to merit a waiver of the mitigation fee for depletions of 100 acre-feet per year or less (Memorandum dated March 9, 1995 to Assistant Regional Director, Ecological Services, Region 6, from Regional Director 6, "Intra-Service Section 7 Consultation for Elimination of Fees for Water Depletions of 100 acre-feet or Less from the Upper Colorado River Basin"). The proposed action would deplete approximately 6.25 acre-feet of water per year, and thus a mitigation fee waiver would be applicable.

3.11.10 Wyoming BLM Species

Wyoming BLM sensitive species occurring in the Kemmerer Field Office that could be affected by the JGGC pipeline proposal are summarized in Table 3-7.

3.12 WILD HORSES

The Wild Free-Roaming Horses and Burros Act of 1971 prohibits the capture or harassment of wild free-roaming horses and burros on BLM lands. Protected horses and burros are to be considered an integral part of the natural system on areas where they were found in 1971 and are to be managed under the multiple use concept (BLM 1994).

Approximately 23 miles of the proposed pipeline route, from the Bird Canyon Compressor Station to the Green River crossing, is within the Little Colorado Desert Wild Horse Herd Management Area (WHHMA). This WHHMA is a designated management area with an appropriate management level of 69 to 100 animals.

Table 3-7. Wyoming BLM Sensitive Species Occurring in the Kemmerer Field Office That Could be Affected by the Jonah Gas Gathering Company Bird Canyon to Opal Pipeline

Mammals			
Common name	Species name	Habitat	Ranking
Rabbit, Pygmy	Brachylagus idahoensis	Basin-prairie and riparian shrub	G4/S2, NSS3, ID, MT, OR/WA, IUCN LR(nt)

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Prairie Dog, White-tailed	Cynomys leucurus	Basin-prairie shrub, grasslands	G4/S2S3, NSS3, MT (Petitioned 7/11/02)
Pocket Gopher, Idaho	Thomomys idahoensis	Shallow stony soils	G4/S2?, NSS3, IUCN-LR(nt)
Birds			
Common Name	Species Name	Habitat	Ranking
Hawk, Ferruginous	Buteo regalis	Basin-prairie shrub, grassland, rock outcrops	G4/S3B, S3N, FSR2, TBNG, NSS3, ID, CO, MT, CA, OR
Sage-grouse, Greater	Centrocercus urophasianus	Basin-prairie shrub, mountain-foothill shrub	G5/S3, TBNG, ID, CO, UT, CA, NV, MT (Petitioned 6/8/2002)
Cuckoo, Yellow-billed	Coccyzus americanus	Open woodlands, streamside willow and alder groves	G5/S2B, SZN, FSR2, TBNG, NNS2, UT, ID, (Petitioned 7/25/2001)
Owl, Burrowing	Athene cunicularia	Grasslands, basin-prairie shrub	G4/S3B, SZN, FSR2, TBNG, NSS4, ID, MT, AZ, CA, OR
Thrasher, Sage	Oreoscoptes montanus	Basin-prairie shrub, mountain-foothill shrub	G5/S3B,SZN, PIF Priority
Shrike, Loggerhead	Lanius ludovicianus	Basin-prairie shrub, mountain-foothill shrub	G5/S4B,SZN, FSR2, TBNG, ID, MT, AZ (Removed from candidate list 2/28/1996)
Sparrow, Brewer's	Spizella breweri	Basin-prairie shrub	G5/S3B,SZN, TBNG, PIF Priority, ID
Sparrow, Sage	Amphispiza belli	Basin-prairie shrub, mountain-foothill shrub	G5/S3B,SZN, PIF Priority, ID, MT, OR
Fish			
Common Name	Species Name	Habitat	Ranking
Chub, Roundtail	Gila robusta	CO River drainage, mostly large rivers, also streams and lakes	G2G3/S2?, NSS1, CO, UT
Chub, Leatherside	Gila copei	Bear, Snake and Green drainages, clear, cool streams and pools	G3G4/S2, NSS1, ID, UT
Sucker, Bluehead	Catostomus discobolus	Bear, Snake and Green drainages, all waters	G4/S2S3, NSS1, CO, UT

Sucker, Flannelmouth	Catostomus latipinnis	CO River drainage, large rivers, streams and lakes	G3G4/S3, NSS1, CO, UT
Trout, Colorado River Cutthroat	Oncorhynchus clarki pleuriticus	CO River drainage, clear mountain streams	G4T2T3/S2, FSR2, FSR4, NSS2, CO, UT, (Petitioned 12/19/1999)
Plants			
Common name	Species name	Habitat	Ranking
Beaver Rim Phlox	Phlox pungens	Sparsely vegetated slopes on sandstone, siltstone, or limestone substrates 6,000-7,400'	G2/S2
Tufted Twinpod	Physaria condensata	Sparsely vegetated shale slopes & ridges 6,500-7,000'	G2/S2

[1] Rankings
Heritage Program
WYNDD uses a standardized ranking system developed by The Nature Conservancy's Natural Heritage Network to assess the global and statewide conservation status of each plant and animal species, subspecies, and variety. Each taxon is ranked on a scale of 1-5, from highest conservation concern to lowest. Codes are as follows:

G	Global rank: Rank refers to the rangewide status of a species.
T	Trinomial rank: Rank refers to the rangewide status of a subspecies or variety.
S	State rank: Rank refers to the status of the taxon (species or subspecies) in Wyoming. State ranks differ from state to state.
1	Critically imperiled because of extreme rarity (often known from 5 or fewer extant occurrences or very few remaining individuals) or because some factor of a species' life history makes it vulnerable to extinction.
2	Imperiled because of rarity (often known from 6-20 occurrences) or because of factors demonstrably making a species vulnerable to extinction.
3	Rare or local throughout its range or found locally in a restricted range (usually known from 21-100 occurrences).
4	Apparently secure, although the species may be quite rare in parts of its range, especially at the periphery.
5	Demonstrably secure, although the species may be rare in parts of its range, especially at the periphery.
H	Known only from historical records. 1950 is the cutoff for plants; 1970 is the cutoff date for animals.
X	Believed to be extinct.

A Accidental or vagrant: A taxon that is not known to regularly breed in the state or which appears very infrequently (typically refers to birds and bats).
B Breeding rank: A state rank modifier indicating the status of a migratory species during the breeding season (used mostly for migratory birds and bats)
N Nonbreeding rank: A state rank modifier indicating the status of a migratory species during the non-breeding season (used mostly for migratory birds and bats)
ZN or ZB Taxa that are not of significant concern in Wyoming during breeding (ZB) or non-breeding (ZN) seasons. Such taxa often are not encountered in the same locations from year to year.
U Possibly in peril, but status uncertain; more information is needed.
Q Questions exist regarding the taxonomic validity of a species, subspecies, or variety.
? Questions exist regarding the assigned G, T, or S rank of a taxon.

State Status

The Wyoming Game and Fish Department has developed a matrix of habitat and population variables to determine the conservation priority of all native, breeding bird and mammal species in the state. Six classes of Native Status Species (NSS) are recognized, of which classes 1, 2, and 3 are considered to be high priorities for conservation attention.

These classes can be defined as follows:

NSS1 Includes species with on-going significant loss of habitat and with populations that are greatly restricted or declining (extirpation appears possible).

NSS2 Species in which (1) habitat is restricted or vulnerable (but no recent or significant loss has occurred) and populations are greatly restricted or declining; or (2) species with on-going significant loss of habitat and populations that are declining or restricted in numbers and distribution (but extirpation is not imminent).

NSS3 Species in which (1) habitat is not restricted, but populations are greatly restricted or declining (extirpation appears possible); or (2) habitat is restricted or vulnerable (but no recent or significant loss has occurred) and populations are declining or restricted in numbers or distribution (but extirpation is not imminent); or (3) significant habitat loss is on-going but the species is widely distributed and population trends are thought to be stable.

Forest Service

Region 2	Rocky Mountain Region
Region 4	Intermountain Region
TBNG	Thunder Basin National Grassland

IUCN - International Union for Conservation of Nature, Rodent Specialist Group. North American Red List. LOWER RISK (LR) - A taxon is Lower Risk when it has been evaluated, does not satisfy the criteria for any of the categories Critically Endangered, Endangered or Vulnerable. Taxa included in the Lower Risk category can be separated into three subcategories:

1.Conservation Dependent (cd). Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation programme targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.

2.Near Threatened (nt). Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable.

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3.Least Concern (lc). Taxa which do not qualify for Conservation Dependent or Near Threatened.

PIF - Partners in Flight, a coalition of federal, state and provincial agencies, private groups, corporations and individuals dedicated to neotropical migratory bird conservation

Petitioned- Species which has been petitioned for listing under the Endangered Species Act
For Plants:
P - Indicates occurrence within BLM Field Office area on Private Land Ownership
S - Indicates occurrence within BLM Field Office area on State Land Ownership
F - Indicates occurrence within BLM Field Office area on other Federal Land Ownership
? - Indicates likely occurrence within BLM Field Office area

3.13 RANGE/OTHER LAND USES

Major land uses in the project area include oil and gas production, livestock grazing, wildlife habitat, and recreation. The proposed pipeline routes would disturb portions of several grazing allotments. North of the Green River, the routes would cross the Figure Four, Eighteen Mile, and Lombard allotments (BLM 1996a). South and west of the Green River, the routes would pass through the Seedskadee, Cow Hollow, Slate Creek, and Granger Lease allotments (BLM 1985a). Table 3-8 presents acreage and animal unit month (AUM) information for each allotment potentially affected by proposed construction activities.

Table 3.8. Grazing Allotments Potentially Affected by the Project.

Allotment	Size (Acres)	Acres /AUM	Livestock Type	Season of Use	Pipeline ROW Acres (AUMs) Within Allotment
Figure Four	114,425	17	Sheep/Cattle	All Year	25 (1.5)
Eighteen-Mile	228,840	12	Sheep/Cattle	All Year	107 (9.0)
Lombard	94,802	12	Sheep/Cattle	All Year	44 (3.6)
Seedskadee	12,555	16	Sheep/Cattle	5/1-12/31	11 (0.7)
Slate Creek	271,170	22	Sheep/Cattle	4/26-11/30	86 (3.9)
Cow Hollow	14,753	14	Cattle	5/15-10/31	29 (2.1)
Granger Lease	522,245	14	Sheep/Cattle	Dec.-Apr./ May.-Oct.	186 (13.3)
Total					**488 (34.1)**

Sources: BLM (1994, 1995a, 1995b, 1996b); personal communication, October 21, 1998, and November 6, 1998, with Nancy Baker, BLM, Range Management Specialist, Rock Springs; personal communication, October 21, 1998 with Pat Netherly, BLM, Range Management Specialist, Kemmerer.

The areas in Sublette County through which the proposed pipeline route passes are zoned RC (Resource/Conservation) (personal communication, October 21, 1998, Joanne Garnett, Sublette County Planner, Pinedale). In Lincoln County, the areas are zoned public, rural, and industrial (personal communication, October 21, 1998, Mike Archibald, Lincoln County Planner, Kemmerer). Areas of Sweetwater County traversed by the proposed routes are zoned agricultural, with some areas of mineral development (personal communication, November 3, 1998, Jeff Schalow, Sweetwater County Land Use Director, Green River).

CHAPTER 4

ANALYSIS OF ENVIRONMENTAL CONSEQUENCES

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CHAPTER 4

ANALYSIS OF ENVIRONMENTAL CONSEQUENCES

4.0 INTRODUCTION

This chapter of the environmental assessment (EA) provides an analysis of the potential environmental consequences that would result from implementation of the proposed JGCC Bird to Opal natural gas pipeline project and/or alternatives, including the compressor stations. Certain measures that would avoid or reduce impacts under the Proposed Action have been included in Chapter 2. The following impact assessment takes these measures into consideration. Additional opportunities to mitigate impacts beyond the measures proposed in Chapter 2 are presented in this chapter for each resource discipline.

An environmental impact or consequence is defined as a modification or change in the existing environment brought about by the proposed action or alternatives to the proposed action. Impacts can be direct or indirect in nature, and can be permanent (long-term) or temporary (short-term). Impacts can vary in degree ranging from only a slight discernable change to a drastic change in the environment. Short-term impacts are impacts that occur during and immediately after pipeline construction and testing and last from two to five years. For purposes of this EA, short-term impacts are defined as lasting five years or less. Long-term impacts are impacts imposed by construction and operations that remain longer than five years and extend for the life of the project and beyond.

Impact significance criteria are presented for each resource potentially adversely affected. These criteria are based on existing regulatory standards, scientific and environmental documentation, and/ or professional judgment. Potential impacts for this project were classified as either significant or not significant. Significant impacts (as defined in CEQ guidelines 40 CFR 1500-1508) are effects that are most substantial and therefore should receive the greatest attention in decision-making. In addition, a finding of significant impacts would necessitate the preparation of an EIS. In the following discussions, impacts are considered adverse unless identified as beneficial.

Discussions of the potential environmental consequences to adversely affected resources include the following.

__Significance Criteria__. The level of impact that would be significant, based on regulatory standards, available scientific documentation, and the professional judgment of BLM resource specialists.

__Impacts__. The level and duration of impacts that would occur as a result of the Proposed Action or the No Action Alternative. The impact evaluation assumes that the applicant-committed practices described in Chapter 2.0 would be implemented

__Mitigation__. Any measures, in addition to those described in Chapter 2.0, that could be applied to avoid or further reduce adverse impacts.

Unavoidable adverse impacts, short-term use of the environment versus long-term productivity, irreversible and irretrievable commitment of resources, and cumulative impacts are discussed in separate sections following the discussions of the specific resources (Sections 4.14, 4.15, 4.16, and 4.17, respectively). Unavoidable adverse impacts cannot be avoided and cannot be completely mitigated. Short-term use of the environment covers the life-of-project (LOP), whereas long-term productivity refers to the period after the project is completed and the area reclaimed. Irreversible and irretrievable impacts are permanent reductions or losses of resources that, once lost, cannot be regained. Cumulative impacts are those that result from the incremental impacts of an action added to other past, present, and reasonably foreseeable actions, regardless of who is responsible for such actions.

4.1 GEOLOGY/MINERALS/PALEONTOLOGY/HAZARDS

4.1.1 Significance Criteria

Impacts to paleontological resources would be significant if the Proposed Action would cause direct damage or destruction of fossils of scientific interest and significance. Impacts would also be significant if construction-related erosion resulted in damage or destruction of fossils or if improved access and visibility due to construction activities led to unauthorized fossil collection or vandalism (EVG 1998).

4.1.2 Impacts

4.1.2.1 The Proposed Action

Excavation for the pipeline would penetrate bedrock in some areas. With the implementation of applicant-committed practices and those listed in Sections 4.1.3.1 and 4.1.3.2, there would be no significant adverse impacts to paleontological resources from the Proposed Action.

4.1.2.2 No Action Alternative

Under the No Action Alternative, no project-related disturbance of paleontological resources would occur.

4.1.3 Mitigation

In addition to applicant-committed procedures, the BLM may require the following general and specific mitigation measures.

4.1.3.1 General Mitigation Measures

The following general mitigation measures would mitigate adverse impacts to fossil resources potentially occurring in the project area.

Worker Instruction - Construction personnel could be instructed about the types of fossils likely to be encountered, legal requirements, and procedures to follow should fossils be uncovered.

Discovery Contingency - If suspected fossil materials are uncovered during construction, the Operator would be required to stop work immediately and contact the BLM AO. Activities would not be resumed until the AO has assessed the situation and provided advice as to whether any mitigating measures need to be undertaken before operations can continue.

Field Survey – The pipeline route has been surveyed for paleontology previously, so no new surveys of the ROW are necessary except in areas where construction alignments deviate from the existing pipeline ROW. In these areas, a qualified paleontologist should conduct preconstruction field survey. A brief letter report of the results of the survey would be submitted to the BLM.

4.1.3.2 Specific Mitigation Measures

Previous field survey has documented the high paleontologic potential of the Bridger Formation to contain scientifically significant fossils along the pipeline ROW south of State Highway 372 to the terminus of the project. The following specific mitigation measures would mitigate adverse impacts to fossil resources in the Bridger Formation, which occur along the ROW.

Monitoring - Construction activities should be monitored south of State Highway 372. Monitoring involving close examination of the bladed ROW /TUPs and spoil piles by a qualified paleontologist should be intensive in the following areas, including from north to south the following: (1) Dodge Rim (Section 28, T23N, R111W; Sections 5, 6, T22N, R111W); (2) Opal Bench (Section 26, T22N, R112W); (3) Craven Creek (Section 13, T 21N, R114W); Opal Station (Section 22, T22N, R114W).

Other areas south of State Highway 372 should be spot checked by a qualified paleontologist. Spot check would involve visual inspection of representative stretches of the ROW. If scientifically significant specimens are identified during spot check, more intensive monitoring may be conducted.

Curation of Specimens - Fossil specimens discovered during monitoring should be prepared, identified, and catalogued into the permanent collections of an established museum repository acceptable to the BLM.

Final Technical Document - A report could be prepared to document the mitigation work conducted and accession of fossil specimens along with locality data into the accepted repository.

4.2 CLIMATE AND AIR QUALITY

4.2.1 Significance Criteria

Significant impacts to air quality from project-related activities would result if it is demonstrated that:

- National Ambient Air Quality Standards (NAAQS) or Wyoming Ambient Air Quality Standards (WAAQS) would be exceeded; or
- Class I or Class II PSD Increments would be exceeded; or
- Air Quality Related Values (AQRVs) would be impacted beyond acceptable levels.

4.2.2 Impacts

4.2.2.1 The Proposed Action

Air pollutant emissions would occur from the Proposed Action during construction activities and pipeline and compressor operation, and these emissions would impact air quality in the project area. The primary pollutants emitted would be particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), sulfur dioxide (SO_2), and hazardous air pollutants (HAPs). Air emissions during project construction would occur from two concurrent activities: installation of the compressor engines and construction of the pipeline. These emissions would be short-term and localized in nature, and would consist primarily of particulate (PM_{10} and $PM_{2.5}$) emissions. During operations, air emissions would result from operation of natural gas-fired compressor engines. These emissions would occur throughout the life of the project and are therefore defined as long-term impacts, and would consist of NO_x, CO, VOC, and HAPs

Air pollutant emissions from construction of the Proposed Action would be temporary in nature and would result primarily from construction of the pipeline, travel on unpaved roads to and from the construction site, wind erosion of disturbed areas, and diesel engine combustion from heavy construction equipment. Surface disturbance and resulting wind erosion emissions from compressor construction activities would be minimal since the compressors would be constructed on the existing Bird Canyon site. Construction of the pipeline would be completed in 75 days, using two spreads.

PM_{10} emissions from construction activity on disturbed areas are calculated using an emission factor from AP-42 Section 13.2.3, "Heavy Construction Operations" (EPA, 1995). PM_{10} emissions from wind erosion of areas disturbed during construction are calculated using an emission factor from AP-42 Section 13.2.5 "Industrial Wind Erosion" (EPA, 1995) and based on a full year of hourly surface meteorological data collected in the Jonah Field of Wyoming in 1999. Water application on disturbed areas would control fugitive particulate emissions and would likely achieve an estimated 50% control efficiency.

Emissions of PM_{10}, $PM_{2.5}$, NO_x, CO, SO_2, and VOC from diesel combustion in heavy equipment are calculated using emission factors from AP-42, Volume II Mobile Sources, Table II-7.1 "Emission Factors for Heavy-Duty, Diesel Powered Construction Equipment" (EPA, 1985).

Particulate emissions from vehicle travel on the unpaved access road to and from the construction site are calculated using emission factors from AP-42 Supplement E, Section 13.2.2 "Unpaved Roads" (EPA, 1998). These calculations conservatively assume no control measures are taken and utilize 0% control efficiency. However, regular water application to the access roads during the construction period would achieve a dust control efficiency of 50%.

During pipeline commissioning, the line would be blown down using a pig launcher and receiver. Air emissions would be insignificant from this activity because a minimal volume of natural gas would be present in the line.

Pollutant emission rates from pipeline construction activities under the Proposed Action are summarized in Table 4-1.

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Table 4-1. Summary of Construction Emissions

Activity	Pollutant Emission Rates											
	PM_{10}		$PM_{2.5}$		NOx		CO		SO2		VOC	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
(Pipeline Construction One Spread)												
Pipeline Construction	573.60	258.12	86.04	38.72	–	–	–	–	–	–	–	-
Pipeline Construction - Unpaved Road Travel	56.41	25.38	8.46	3.81	–	–	–	–	–	–	–	-
Pipeline Construction - Diesel Combustion	4.20	1.89	4.20	1.89	48.59	21.87	15.59	7.02	4.92	2.21	4.60	2.0
Pipeline Construction - Wind Erosion	232.14	42.36	34.82	5.22	–	–	–	–	–	–	–	-
Total Pipeline Construction - Two Spreads	1732.69	655.52	267.04	99.28	97.18	43.73	31.18	14.03	9.83	4.43	9.20	4.1

Table 4.2. Summary of Production Emissions

	NOx		CO		VOC		Formaldehyde	
Activity	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Additional Bird Canyon Compression	18.5	81.1	7.9	34.6	13.2	57.9	1.3	5.

Upon commencement of pipeline operations, one employee would travel along the length of the pipeline every six months for inspection and maintenance. Particulate emissions from this intermittent travel at low speed along the unimproved road paralleling the pipeline would be minimal.

Air emissions from an additional 12,000 horsepower of compression proposed for the Bird Canyon station would also result in emissions of NO$_x$, CO, VOC and HAPs (formaldehyde). NO$_x$ emissions from the compressor engines would be 0.7 gram per horsepower-hour. Pollutant emissions which would occur from this additional compression, and which comprise total production emissions, are presented in Table 4-2.

A 12-mile segment of the pipeline could be vented to the atmosphere in a blowdown. This blowdown would occur only in an emergency situation and would be expected to occur once during the LOP.

WDEQ-AQD air quality requirements for short-term construction are limited to the minimization of fugitive dust during construction operations. Construction emissions would not be expected to cause exceedences in ambient air quality standards due to the emissions' temporary and localized nature. Prior to commencement of operations, WDEQ-AQD requires an emissions source to undergo a permit review to ensure compliance with New Source Review permit requirements. An air quality permit application for the modified Bird Canyon Station would be required to be submitted to WDEQ-AQD for review, and would require approval prior to plant construction or operation. No exceedences NAAQS, WAAQS, and Class II PSD Increments for any regulated air pollutant emitted would be allowed under WDEQ-AQD regulations.

A recent permit application was submitted to WDEQ-AQD for the Luman Station, a compressor station approximately 25 km northeast of the proposed compression. A NO$_2$ modeling analysis performed as part of that application included NO$_x$ sources within 30 kilometers of the proposed facility, including the existing Bird Canyon compression facility. The maximum annual NO$_2$ concentration, modeled in the vicinity of the Luman Station and from all modeled NO$_x$ sources combined, was found to be 24.5 micrograms per cubic meter (Fg/m^3), below the annual NO$_2$ NAAQS, WAAQS, and PSD Class II Increment. A representation of the 12,000 hp of compression proposed to be added to the Bird Canyon facility as part of this Proposed Action was modeled separately and ambient NO$_2$ concentration impacts from this proposed compression were predicted. The analysis predicted a maximum NO$_2$ impact of 1.0 Fg/m^3 which occurred approximately 700 meters from the Bird Canyon facility. Predicted impacts from this proposed compression were also considered at the receptor location which produced the maximum modeled concentration in the Luman analysis. The maximum contribution of the proposed additional compression at Bird Canyon at that location was predicted to add 0.008 Fg/m^3 to the maximum Luman analysis concentration of 24.5 Fg/m^3. This concentration was less than the NAAQS, WAAQS, and PSD Class II Increment for NO$_2$.

Ambient pollutant data collected in the region would also serve as a demonstration of compliance with ambient standards. Regional ambient air quality background concentrations presented in Table 3-6 indicate that existing conditions in the region are below state and federal ambient standards.

Short-term air quality impacts resulting from construction operations under the Proposed Action would be temporary and localized. Because the Proposed Action would be required to operate in accordance with WDEQ-AQD permit requirements, long-term air quality impacts would be limited to air emissions which were legally allowed by a WDEQ-AQD-issued permit and which would allow compliance with WAAQS, NAAQS, and PSD Class II Increments. Ambient air impacts from proposed compression would result in an increase in maximum NO$_2$ concentrations of 0.01 Fg/m^3 over currently modeled impact levels. Impacts from the proposed action would be mitigated following the measures outlined in Chapter 2.0.

4.2.2.2 No Action Alternative

Under the No Action Alternative, the pipeline and additional compressors would not be constructed and no additional impacts to air quality resources would occur beyond existing levels.

4.2.3 Mitigation Summary

No additional mitigation procedures to reduce air quality impacts would be required in addition to those presented in Section 2.0 of this EA.

4.3 SOILS

4.3.1 Significance Criteria

Impacts would be considered significant if a reduction in soil productivity and/or increased erosion would prevent successful reclamation and revegetation.

4.3.2 Impacts

4.3.2.1 The Proposed Action

The Proposed Action would disturb approximately 488 acres. Potential impacts to soils from the Proposed Action could include increased susceptibility to water and wind erosion, increased sediment and salinity into the Colorado River system, loss of topsoil, soil compaction, and decreased soil and vegetation productivity. Further, cutting a waterbar could discharge runoff on to adjacent ROWs, thereby creating gullies. As a result, the success of reclamation and revegetation efforts could be affected if these are not well-planned and carried out. Pipelines constructed in 1997 and 1999 in the same corridor as the Opal Loop pipeline are stable and generally exhibit successful grass revegetation.

The entire pipeline ROW would be reclaimed and revegetated immediately after disturbance to stabilize soils. There would be a slight increase in wind and water erosion until the land is stabilized and revegetated; however, overall impacts to soils from the Proposed Action would not be significant.

4.3.2.2 No Action Alternative

No surface disturbance would occur under the No Action Alternative; therefore, no impacts to soils/watersheds would result. Wind and water erosion would continue at present rates.

4.3.3 Mitigation

Compliance with applicant committed mitigation measures and the oversight of a BLM construction inspector would minimize the chances of reclamation failure.

An important but often overlooked element of reclamation is the reduction of soil compaction. Compaction is likely to occur under most situations along the pipeline ROW where construction traffic has compacted the soil. Ripper-teeth equipment may be used to loosen compacted surface soil, with the soil surface left rough. The BLM may require that all disturbances to be revegetated be ripped to reduce the adverse effect of compaction. Additional attention may be focused on the following areas.

- At drainage crossings such as Craven Creek, the banks could be replaced and stabilized to the original slope. Banks could be stabilized to the original contour and made impassable;
- The BLM may require that steep slopes not be drill seeded up slope and downslope to avoid the creation of furrows, which channel and concentrate overland flow, creating gullies. Steep slopes could be broadcast seeded to avoid rills or, if there was no vegetation present prior to construction, not seeded at all. In order to discourage vehicular traffic, these slopes could be left as rough as possible. Because much of the ROW parallels existing disturbances, waterbars could be continuous across the entire area of disturbance, not just the current project. (This would require cooperation on the part of all Operators);
- Because many of the soils are subject to piping and subsidence, adequate backfill compaction in the trench is important. There should be no berms left over the trench in anticipation of subsidence. Because many of these soils have rock fragments, especially north of Fontenelle, trenches must be backfilled to avoid berms of fractured sandstone.
- This ROW could be seeded as soon as construction activity is completed rather than only in the spring or fall.

In the event that new areas susceptible to erosion are found during construction activities, the BLM may require additional site-specific erosion control measures be applied to reduce erosion and facilitate revegetation.

4.4 WATER RESOURCES

4.4.1 Significance Criteria

Significant impacts to surface waters would occur if water quality standards would be violated or if project activities resulted in a downgrading of existing WDEQ or WGFD stream classifications.

4.4.2 Impacts

4.4.2.1 The Proposed Action

JGGC's bore crossing of the Green River would cause no increase in sedimentation from bank erosion. If water courses are altered, including intermittent streams, riparian vegetation could be affected. Implementation of the applicant-committed practices would ensure that impacts to water resources would be minimized and would not violate water quality standards or cause a change in stream classification. Disturbance would be minimized and conducted during the time of year that would limit damage to habitats and sediment discharge to the river; therefore, impacts to rivers would not be significant.

4.4.2.2 No Action Alternative

No surface disturbance would occur under the No Action Alternative; therefore, no impacts to water resources would occur.

4.4.3 Mitigation

With implementation of applicant-committed mitigation measures, no additional mitigation is recommended.

4.5 VEGETATION/RIPARIAN AREAS

4.5.1 Significance Criteria

Impacts to vegetation resulting from the Proposed Action would be considered significant if they resulted in a long-term reduction in vegetation productivity or a permanent change in species composition. Impacts to riparian areas/wetlands would be considered significant if they resulted in long-term loss of wetland or riparian habitat, or violation of E.O. 11990.

4.5.2 Impacts

4.5.2.1 The Proposed Action

The proposed pipeline route would disturb approximately 488 acres of vegetation. All land disturbed by construction activities would be reclaimed and revegetated shortly after disturbance. Vegetation density and species composition would be altered on disturbed areas, resulting in higher production of grasses for approximately 20 years until shrubs become reestablished. No trees would be removed at the Green River crossing. Implementation of reclamation procedures would control erosion and expedite revegetation: therefore, impacts to vegetation would not be significant.

Operators would implement applicant-committed practices when crossing riparian areas. JGGC would bore under the Green River and their associated wetlands, thereby avoiding impacts to the surface. Disturbance would be minimized and conducted during the time of year that would limit damage to the habitat and sediment discharge to the rivers; therefore, impacts to riparian areas/wetlands would not be significant.

Surface disturbance activities could affect special status plants directly and indirectly by destroying individuals or their habitat, and introducing weeds. Weedy species often thrive on disturbed sites such as road rights-of-way and out-compete more desirable plant species. Increased weed invasion may render a site less productive as a source of forage for wildlife and livestock.

4.5.2.2 No Action Alternative

Under the No Action Alternative, no vegetation or riparian areas would be disturbed.

4.5.3 Mitigation

Monitoring should occur for weed species identified by the State of Wyoming and the BLM. Should weed species be found during monitoring, control and eradication efforts should be implemented following applicable County control procedures. Further, construction contractors should be required to clean vehicles and equipment of weed seed prior to entering the project area.

With implementation of applicant-committed mitigation measures in Chapter 2, no additional mitigation is recommended.

4.6 SOCIOECONOMIC/ENVIRONMENTAL JUSTICE

4.6.1 Impact Significance Criteria

The following criteria are used to determine whether socioeconomic impacts of the Proposed Action would be significant:

- An increase in county or community population that would strain the ability of affected communities to provide services or adapt to growth-related changes.
- An aggregate change in revenue and expenditure flows likely to result in an inability of government to maintain public services.
- Permanent displacement of residents or users of affected areas that would result from project-induced changes in or conflicts with existing ways of life.

4.6.2 Impacts

4.6.2.1 The Proposed Action

Socioeconomic effects of the proposed pipeline and ancillary facilities would be largely positive. The combined construction workforce for the pipeline and compressor station would peak at an estimated 80 workers. Pipeline construction would require an estimated 75 days; compressor station construction would require an estimated 90 days.

Although some construction workers would be hired from the available local workforce, non-local construction workers would require temporary housing (motel rooms or pads in RV parks) while they are working on the project. These workers would be able to find temporary accommodations in LaBarge or Kemmerer.

Construction accidents could generate demand for emergency response services; these services are provided by agencies located in LaBarge and Kemmerer. Demand for emergency services is anticipated to be minimal, given the relatively small construction workforce and the short duration of construction.

The proposed pipeline would generate ad valorem property tax revenues to Sublette, Lincoln and Sweetwater counties, certain special districts and school districts and the Wyoming State School Foundation Fund. These revenues would be based on 11.5 percent of the value of the pipeline, compressor station and other facilities and the appropriate mill levies.

Sales and use tax revenues would be generated from the purchase and use of materials, equipment and supplies. In the case of the statewide 4 percent sales and use tax, these revenues would accrue to the State of Wyoming (72 percent) and the counties where the pipeline is located (28 percent less administrative costs). The county share would be further distributed to incorporated municipalities within the county, using a population-based formula. Both Lincoln and Sweetwater County impose an additional one percent general purchase sales tax which is distributed to each county and its municipalities using the same formula as the local share of the statewide tax.

By enabling production, transmission and sales of an estimated daily average of 300 to 400 MMCF of gas per day, the pipeline would contribute to substantial economic and fiscal benefits for affected counties and municipalities, the State of Wyoming and the nation as a whole. The University Of Wyoming Agricultural Economics Department recently updated its Southwest Wyoming Input-Output Model, developed for the BLM's 1997 Southwest Wyoming Resource Evaluation. The model estimated that each MMCF of natural gas produced in southwest Wyoming during 2003 would generate a total economic impact of $3,403.38. Using this estimate and assuming an average daily production of 350 MMCF for a full year, the proposed pipeline would enable an estimated $435 million in total economic impact for southwest Wyoming during 2003, and similar amounts thereafter for the productive life of the fields, depending on production volumes and gas prices.

Environmental Justice

The proposed pipeline would not directly affect the social, cultural, or economic well-being and health of minorities or low income groups. The pipeline is relatively distant from population centers, therefore no populations would be subjected to physical impacts from the pipeline or ancillary facilities. Low income groups may indirectly benefit from the increased economic activity and job opportunities resulting from increased production enabled by the pipeline.

4.6.2.2 The No-Action Alternative

Implementation of the No Action alternative would result in no change to the current socioeconomic conditions. Taxes and wages would be foregone.

4.7 CULTURAL RESOURCES

4.7.1 Significance Criteria

Significant impacts to cultural resources would include:

- loss of NRHP qualities of cultural resources that are eligible for the NRHP;

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- any surface disturbing activities within 0.25 mi of a historic trail, unless such disturbance would not be visible from the trail or would occur in an existing visual intrusion within the buffer; and
- disturbance of important sites of religious or cultural significance to Native Americans.

4.7.2 Impacts

4.7.2.1 The Proposed Action

The proposed JGGC and pipeline would not affect any known, intact, significant cultural resources, but there is a moderate potential for encountering buried cultural materials undetected during Class III inventories (Murray 1998). Based on Class III cultural resources inventories, Sines (1998a, 1998b, 1998c) and Murray (1998) recommend cultural resources clearance for the proposed pipeline route, following the terms and conditions of the approved archaeological discovery plans for open trench inspections during construction. Since the pipeline would cross historic trails at non contributing portions of the overall trail systems, no significant adverse effects to affected trail variants are anticipated (Sines 1998a). Based on initial consultation with Native Americans, no adverse impacts to known religious or culturally significant sites would occur as a result of the proposed construction activities. Should property types of identified concern to Native American Tribes be recorded for the project area, additional consultations would be performed.

Mitigation measures described below along with the applicant-committed practices outlined in Section 2.1.7.3 would ensure that no significant impacts to cultural resources or historic trails occur.

Based on a field investigation, no adverse impacts are anticipated to occur to known Native American sites of religious or cultural significance.

4.7.2.2 No Action Alternative

Under the No Action Alternative, no project-related disturbance of cultural resources would occur.

4.7.3 Mitigation

Cultural clearance has been recommended for the proposed pipeline. The project would impact a total of 51 sites, but the area of impact is restricted to non-contributing portions of significant sites or non-eligible sites. Because cultural resources that are not eligible for nomination to the National Register of Historic Places are not considered "historic properties," then by the Advisory Council's guidelines for Section 106 compliance there would be no adverse effect on any historic properties by the construction or maintenance of the proposed pipeline. Because of the potential for the project to affect subsurface historic properties not detected by the Class III inventory, an open trench inspection will be conducted in accordance with the terms of the *Discovery Plan and Research Orientation*, detailed in *Appendix C of Class III Cultural Resource Inventory and Site Reconnaissance, Bird Canyon to Opal 24-inch Pipeline and Staging Areas*, by J. Yerkovich of Western Archaeological Services, Rock Springs, Wyoming (May 2003).

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4.8 NOISE

4.8.1 Significance Criteria

Long-term exceedance of federal standards for noise (55 dBA) at existing residences or other noise-sensitive areas would be considered a significant impact.

4.8.2 Impacts

4.8.2.1 The Proposed Action

Short-term sound levels during construction would exceed existing background levels; however, noise impacts would be short-term, would end when construction is completed, and are not anticipated to result in significant impacts.

Noise generated by compressor engines would be loud (estimated at approximately 65 dBA on-site and 40 dBA at 0.25 mile) for the LOP. However, no noise sensitive areas, including a known sage grouse lek near the Jonah Gas Hub, occur within 0.25 mile of the proposed compressor site, so none would be affected.

4.8.2.2 No Action Alternative

Under the No Action Alternative, no construction activity would occur; therefore, there would be no impacts resulting from construction related noise.

4.8.3 Mitigation

The BLM may require that no construction activities take place during raptor nesting, sage grouse strutting or nesting, or big game crucial winter periods in sensitive areas.

4.9 VISUAL RESOURCES

4.9.1 Significance Criteria

Any action that would violate VRM class guidelines or cause a downgrading of VRM class in any area would be a significant impact.

4.9.2 Impacts

4.9.2.1 The Proposed Action

Most of the project area is designated VRM Class IV and the objectives of Class IV areas are to provide for management activities that require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high and management activities may dominate the view. The Class II and III areas crossed by the pipeline near the Green River crossing would be adjacent to existing roads and other pipeline ROWs. Visual disturbance under the Proposed Action would not exceed the criteria for maintaining the VRM classes; therefore, no significant impacts are anticipated.

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4.9.2.2 No Action Alternative

There would be no additional impacts to, or changes in, existing visual resources under the No Action Alternative since no project-related disturbance would occur.

4.9.3 Mitigation

No additional mitigation is recommended.

4.10 WILDLIFE AND FISHERIES

4.10.1 Significance Criteria

Impacts to wildlife resources would be considered significant if any project-related action would:

- prevent realization of WGFD big game population objectives;
- result in the disruption of raptor breeding activities (and subsequent reproductive failure);
- result in the continuous disruption of sage grouse breeding activities; and/or
- prevent realization of WGFD fish population objectives.

4.10.2 Impacts

4.10.2.2 The Proposed Action

Human presence and disturbance from pipeline and compressor station construction would disrupt animal activity and cause some loss of habitat. Disruption would be limited to the construction period, whereas habitat loss would occur for several years until revegetation is successful. Construction would disturb pronghorn crucial winter /year long and severe winter relief range, which would be reclaimed and revegetated during the first appropriate season after initial disturbance. Grasses and forbs would likely be available within one year for spring/summer/fall forage. The disturbance would also move shrubs, however, and it would likely be 20 or more years before shrubs would be available along the proposed pipeline route for pronghorn winter forage.

Disturbance during construction would be short-term and localized. Pronghorn in the area would have comparable adjacent habitat to use and much of the construction would be adjacent to existing pipeline ROWs. Construction activities during crucial winter periods (November 15 through April 30) on occupied crucial winter ranges could have an adverse effect on wintering pronghorn populations.

No significant impacts to other big game species are anticipated since there would be disturbance to their crucial winter ranges. In addition, no significant impacts to migratory wildlife movements are anticipated since no fencing is proposed.

BLM biologists would determine nest occupancy of any raptor nests that occur close enough to potentially be disturbed by the construction activity. Because construction would be delayed until young have fledged, there would be no impacts to raptor nesting caused by the Proposed Action. Reduction in raptor prey species is not anticipated to be a concern since disturbance

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would occur on a small area relative to the total available prey habitat.

One sage grouse lek and eight sage grouse nesting areas occur within 2 miles of the proposed pipeline route; any sagebrush habitat within 2 miles of a lek is considered to be sage grouse nesting habitat. With the implementation of applicant-committed measures, there would be no disruption of sage grouse breeding or nesting activity due to the Proposed Action.

The proposed pipeline project would require a total water withdrawal of approximately 6.25 acre-ft. from the Green River. All hydrostatic test waters would be discharged into the drainage from which it was taken. The Proposed Action would result in no measurable impacts to fish populations in the Green River because implementation of applicant-committed practices, as well as prompt reclamation and revegetation, would limit the volume of sediments reaching the river.

Primary effects to other mammal, bird, and amphibian/reptile populations would occur in direct proportion to the amount of a species' habitat removed. Since total surface disturbance represents only a very small proportion of available habitats, impacts on these populations are not anticipated to be significant.

4.10.2.2 No Action Alternative

Under the No Action Alternative, no construction or maintenance activities would occur; therefore, there would be no impacts to wildlife and fisheries.

4.10.3 Mitigation

To protect wintering pronghorn, BLM may prohibit construction activity between November 15 and April 30 in crucial winter ranges as shown on Figure 3-2. Crucial winter range stipulations for pronghorn antelope may be applied

To protect nesting raptors, the BLM may require that no construction activity occur between February 1 and July 31 in those raptor nesting areas shown on Figure 3-4.

The BLM may require no construction activity between February 1 and May 15 to protect sage grouse leks shown on Figure 3-4. To protect known sage grouse nesting areas, the BLM may limit construction activities from April 1 to July 1 in those areas shown on Figure 3-4.

If construction were to occur between April 1 and July 1, a survey would be required prior to the start of activities by the BLM in suitable nesting habitat along and within 150 ft of either side of the ROW/TUP by a BLM biologist or BLM-approved biologist. If a sage grouse nest is encountered, construction may be delayed within 150 ft of the nest until the young birds have fledged or the pipeline may be rerouted to avoid the nest.

4.11 THREATENED, ENDANGERED, CANDIDATE, AND SPECIAL STATUS SPECIES

4.11.1 Significance Criteria

Any action that would result in a jeopardy opinion for a federally listed T&E species would be considered a significant impact. Any action that would cause a candidate species to be listed as

T&E would be a significant impact.

4.11.2 Impacts

4.11.2.1 The Proposed Action

T&E Animal Species

Black-footed ferret, Gray wolf, Canada lynx, Grizzly bear, Kendall Warm Springs dace, Bald eagle, Ute ladies'- tresses, Mountain plover, and Colorado River fish (Long 2003).

Black-footed ferret - Although it is unlikely that black-footed ferrets inhabit areas along the proposed pipeline route, white-tailed prairie dog colonies are common and could provide potential ferret habitat. To protect black-footed ferrets potentially occurring in the area, Operators would implement ferret surveys of suitable white-tailed prairie dog colonies affected by the proposed pipeline route as directed by the BLM and/ or USFWS (Long 2003).

Gray Wolf - Although Gray wolves have the potential to move through the project area, it is not a part of their regularly-used habitat and "No effect" to this species is anticipated.

Canada Lynx - Because no known habitat for Canada Lynx occurs in the project area and the most recent sightings of this animal occurred more than 20 years ago, the Proposed Action is not likely to adversely impact this species.

Grizzly Bear - Because of the lack of suitable habitat, the grizzly bear is not expected to occur on the pipeline ROW, and the Proposed Action would have "No effect" on this species.

Kendall Warm Springs Dace - Because the Kendall Warm Springs are located some distance from the project area in the upper Green River, and no drainages crossed by the pipeline ROW drain into Kendall Warm Springs, the proposed action would have "No effect" on the Kendall Warm Springs Dace.

Bald Eagle The active bald eagle nest at the Green River crossing would not be adversely affected or disturbed with implementation of JGGC's proposed action and USFWS specified procedures that protect bald eagles. Federal guidelines prohibit disturbance within one-mile of the nest between February 1 and August 15.

Ute ladies' tresses - Potential habitat for sensitive plants (including Ute ladies' tresses) has been documented in the area (BLM 1995a, 1995b). Extensive surveys for Ute ladies' tresses have been conducted by the BLM in the project area and none has been found. No additional surveys Ute ladies' tresses will be required. The proposed pipeline route north of the existing Mountain Gas Compressor Station in Section 14, T24N, R111W, was cleared for sensitive plants in 1996 (BLM 1996b). The proposed surveys south of this compressor reveal the presence of sensitive plant species in areas to be affected, these plants would be avoided or additional site-specific mitigation measures would be applied (section 4.11.4). Therefore, no significant impacts are anticipated.

Mountain plover – This ground-nesting species is typically found in areas of short (less than four inches) vegetation on slopes of less than three percent. Any short grass, very short shrub, or cushion plant community could be considered plover nesting habitat, however, mountain plovers prefer shortgrass prairie with open, level or slightly rolling areas. These habitats are quite often associated with prairie dog colonies. Some suitable mountain plover habitat has been identified along the pipeline corridor, particularly in reclaimed areas associated with previous pipeline construction. To minimize potential adverse impacts to plovers, the USFWS recommends surveys for mountain plovers in all suitable habitat as well as avoidance of nesting areas from April 10 through July 10. Additionally, the USFWS recommends avoidance of nesting and brood rearing areas during pipeline layout to reduce direct impacts to and mortality of individual mountain plovers within the project area. Consultation with the USFWS will be conducted to determine possible effects to mountain plover.

Colorado River fish - The four USFWS-listed T&E fish species (bonytail chub, humpback chub, Colorado pikeminnow, and razorback sucker) that occur within the Colorado River system could be adversely affected by surface water withdrawals from the Green River for hydrostatic testing and dust control. The withdrawal of 6.25 acre-ft. is a May Effect, Likely to Adversely Affect impact to the Colorado River fish and would result in a jeopardy opinion from the USFWS. However, since the withdrawal is less than 100 acre ft., the mitigation employed under the "Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin", would offset the impacts of the loss. Although hydrostatic test water will be discharged in the drainage it was taken, consultation with the USFWS will be conducted to determine possible effects to Colorado River fish.

Sensitive and Candidate Wildlife Species

The Proposed Action is not likely to jeopardize the status of sensitive or candidate wildlife species. With construction of river crossings at times of low water flow and the use of applicant-committed practices and erosion control techniques, the Proposed Action is not likely to impact sensitive fish or bird species. Sensitive birds in the vicinity of Seedskadee National Wildlife Refuge would be protected by mitigation measures for raptors. Because habitat disturbance would be minimal, it is unlikely that birds or pygmy rabbits would be permanently displaced. In the case of burrowing owls, displacement is not likely to have a significant effect because of the availability of suitable habitat (prairie dog colonies) outside proposed pipeline corridors.

Threatened, Endangered, and Sensitive Plant Species

4.11.2.2 No Action Alternative

No impacts to T&E, candidate, and/or sensitive plant and animal species would occur as a result of the No Action Alternative since no project-related disturbance would occur.

4.11.3 Mitigation

USFWS guidelines call for minimizing human disturbance within one-mile of bald eagle nesting areas between February 15 and August 15 (Long 2003), and if the bald eagle nest near the Green River crossing is occupied, no construction activities would occur within one-mile of the nest during this period to prevent displacement of adults and to allow the young to fledge. Consultation with the USFWS will be conducted to determine possible effects to bald eagle. The BLM may request that JGGC instruct all pipeline workers and contractors to avoid bald eagle nesting, roosting, and foraging areas and to leave these areas (i.e., Green River crossing site) as soon as construction is complete.

If construction activities would occur between April 1 and July 31, the BLM may require field surveys for nesting mountain plovers in compliance with USFWS survey protocol, and if nesting activity is discovered, the BLM may require construction activities be delayed to allow the young to fledge.

Prairie dog towns within the project area are scheduled to be mapped prior to project implementation. Ferret surveys would be conducted prior to any disturbance if a prairie dog town meets the requirements to be considered suitable black-footed ferret habitat.

To minimize human-caused disturbance of sensitive wildlife species, the BLM may require Operators to inform all pipeline workers and contractors of applicable wildlife laws and the penalties associated with unlawful take and harassment of wildlife species, particularly T &E species.

4.12 WILD HORSES

4.12.1 Significance Criteria

Any activity that resulted in substantial habitat loss for wild horses or a permanent reduction in population numbers below BLM management levels would be considered a significant impact.

4.12.2 Impacts

4.12.2.1 The Proposed Action

The Proposed Action would result in the short-term disturbance of approximately 195 acres in the Little Colorado Desert WHHMA. Horses would likely move to adjacent habitats during pipeline construction, and the area would be revegetated with palatable forage. For these reasons, the Proposed Action would not significantly impact wild horses or their habitat. The level of development in this area has and will continue to impact the opportunity to observe the horses in a natural, wild-free roaming environment.

4.12.2.2 No Action Alternative

Because there would be no habitat disturbance, there would be no impact to wild horses under the No Action Alternative.

4.12.3 Mitigation

No additional mitigation was identified.

4.13 RANGE/OTHER LAND USES

4.13.1 Significance Criteria

Impacts to surface ownership/use would be significant if the pipeline precluded other current uses adjacent to the pipeline route or if there would be a reduction in AUMs of a magnitude that would require modifications in grazing allotments or other actions that would prevent the realization of grazing goals.

4.13.2 Impacts

4.13.2.1 The Proposed Action

The proposed construction activities would be compatible with zoning classifications in all counties associated with the project. The Proposed Action would result in disturbance to forage supporting permitted livestock within the project area. Additionally, parking or other activities in the vicinity of livestock watering areas may prevent livestock use of these areas and/ or cause increased livestock stress. With rapid construction and associated revegetation, the pipeline route would likely produce more grass forage within the first few years than is produced under existing conditions because the grass would have little competition from shrubs during the initial stages of revegetation. For these reasons, impacts to livestock and grazing management would be short-term and would not be significant.

The Proposed Action would not have a significant impact on any of the resources that contribute to healthy rangelands, such as:

- stable soils that allow for water infiltration, optimal plant growth, and minimal surface runoff;
- healthy riparian areas;
- healthy upland vegetation;
- habitat capable of supporting native plant and animal species, including sensitive plant species;
- water quality that meets state standards; and
- air quality that meets state standards.

4.13.2.2 No Action Alternative

There would be no impacts from the No Action Alternative because there would be no change in surface use and no disturbance of forage.

4.13.3 Mitigation

The BLM may require the avoidance of parking and other activities near livestock water sources during non-construction periods to avoid or reduce potential impacts to livestock.

4.14 UNAVOIDABLE ADVERSE IMPACTS

4.14.1 The Proposed Action

The Proposed Action would disturb approximately 488 acres, thus increasing the potential for wind and water erosion before the land is revegetated. Other unavoidable adverse impacts are a short-term loss of vegetation and forage production, the temporary loss of livestock forage, short-term turbidity and some sedimentation at trench crossings of river, short-term impacts to air quality /noise levels due to construction activities, short-term loss of pronghorn crucial winter range and wild horse habitat, and possible temporary disruption of wildlife activities during construction.

4.14.2 No Action Alternative

Under the No Action Alternative, there would be no beneficial economic impacts to local economies.

4.15 RELATIONSHIP BETWEEN SHORT-TERM USE OF THE ENVIRONMENT VS. LONG-TERM PRODUCTIVITY

4.15.1 The Proposed Action

Short-term use of the environment would facilitate and enhance natural gas transportation and stimulate local economies. Environmental impacts would be short-term and insignificant. The proposed project would not adversely affect long-term use and would enhance long-term productivity related to natural gas supplies.

4.15.2 No Action Alternative

There would be no changes in short-term use under the No Action Alternative. Long-term productivity in terms of natural gas transportation would be reduced.

4.16 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

4.16.1 The Proposed Action

Irreversible or irretrievable commitments of resources would include the depletion of energy, materials, and manpower necessary to implement the Proposed Action.

4.16.2 No Action Alternative

There would be no resource commitments under the No Action Alternative.

4.17 CUMULATIVE IMPACTS

Cumulative environmental impacts are those resulting from the incremental impacts of an action added to other past, present, and reasonably foreseeable future actions, regardless of who is responsible for such actions. They may result solely from human activities or in combination with natural events and processes. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Cumulative impacts of natural gas development in the Fontenelle, Moxa Arch, Jonah II, and Pinedale Anticline cumulative impact analysis area have been extensively documented (BLM 1995a, 1995b, 1997c, 2000d), and no cumulative impacts beyond those described in these documents would occur as a result of this project. The Bird to Opal pipeline, Sublette, Sweetwater, and Lincoln Counties, Wyoming project would provide beneficial impacts to local economies. There would be no changes in land use, although natural gas recovery would become a more dominant use and require more coordination with other area uses. Sedimentation to the Green River would be negligible, and impacts to vegetation would not be significant. Sensitive plants and T &E species would be protected. There would be a small reduction in big game habitats, including crucial winter ranges, but none would be significant.

Disturbance and/or loss of other unidentified sites or artifacts could add to the cumulative loss of information about our heritage in the analysis area and in the region if these sites or resources are not identified and inventoried prior to disturbance. Any loss or damage to unidentified cultural or historical sites or resources associated with the proposed project, combined with similar losses or damage due to mineral development could be substantial. Such losses are not expected because application of mitigation actions would be implemented.

One potential resource of concern in this cumulative analysis is air quality, since the proposed pipeline and compression would have air emissions during construction and operation. The Pinedale Anticline EIS (PAC EIS) (BLM, 2000), completed in May 2000, analyzed cumulative air quality impacts at Class I and Class II areas from emissions sources in southwest Wyoming. The analysis used an approach that included the modeling of existing and proposed regional sources at permitted and planned emission rates, respectively. Industrial development after 1995 was explicitly modeled in the analysis for sources in southwest Wyoming, northwest Colorado, and northeast Utah. 631 tons of PM_{10}, 2,663 tons of NO_x, 1,070 tons of SO_2, and 7,272 tons of VOC were inventoried in southwest Wyoming as part of the PAC EIS cumulative analysis. Industrial development before 1995 was accounted for in regional ambient background concentrations for each pollutant.

The PAC EIS air quality analysis predicted the impacts on ambient concentrations in PSD Class I areas and the impacts on AQRVs such as acid deposition at sensitive lakes and regional visibility at Class I areas. The study found no exceedences of PSD Class I Increments in federal Class I areas. Potential cumulative impacts to sensitive lakes were found to be below applicable significance thresholds. The cumulative visibility study, including the worst-case development alternative of those proposed in the PAC EIS, found a maximum of 15 days which exceeded the 0.5 deciview or 5% change in extinction visibility management threshold. Cumulative visibility impacts for all analyzed alternatives were found to be below the visibility threshold of 1.0 deciview or 10% change in extinction.

The PAC EIS cumulative analysis examined long-term emissions related to the operation of emissions sources. No construction emissions were included in the cumulative analysis. The operation phase of the Proposed Action, for which emission rates are shown in Table 4.2, would constitute an increase in NO_x emissions of 3% over levels analyzed in the PAC EIS and no increase over modeled cumulative emissions of PM_{10}, $PM_{2.5}$, or SO_2.

The Bird to Opal pipeline, Sublette, Sweetwater, and Lincoln Counties, Wyoming project is not expected to contribute significantly to adverse cumulative impacts.

4.17.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be allowed, but other actions impacting the project area may still be executed. Therefore, cumulative impacts would not include the direct, indirect, and residual impacts of the Bird to Opal Pipeline project.

4.18 RESIDUAL IMPACTS

4.18.1 The Proposed Action

Table 4-3 details the residual impacts of the Bird to Opal Pipeline project on the resource disciplines analyzed in this document.

Table 4-3. Residual Impacts of the Bird to Opal Pipeline Project.

Resource	Residual Impacts
Geology/Minerals/Paleontology/Hazards	None.
Climate and Air Quality	Air emissions would be generated during construction activities occurring over the 75-day construction period. In addition, air emissions would be generated through operation of the compressor engines. These impacts would occur beyond the mitigation measures outlined in Section 2.0. Short-term impacts would be within state-mandated air quality levels, would be localized and temporary, and would be quickly dispersed by the wind. Long-term impacts of pollutant emissions from year-round compressor operation would be within permit limits established by WDEQ-AQD and would be less than NAAQS, WAAQS, and PSD Class II Increments. Because no air emissions would occur after the LOP, no residual impacts would be expected beyond the LOP..
Soils	None.
Water Resources	None.
Vegetation	Grasses and forbs would be re-established within 3 years and sagebrush communities would return within 20 to 30 years.
Socioeconomic/Environmental Justice	The federal, state and local government revenue streams associated with production entering the pipeline would continue for the life of the project.
Cultural	None.
Noise	None.
Visual	None.
Wildlife and Fisheries	Long-term loss of habitat for animals and increased human presence in habitat.
Threatened, Endangered, Candidate, and special status species	Long-term loss of habitat for animals, plants, and Colorado River water depletion for T&E fishes.
Range and Other Land Uses	None.

4.18.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would be denied and none of the residual impacts detailed above would occur. The Project Area would remain in its current state.

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CHAPTER 5

CONSULTATION AND COORDINATION

CHAPTER 5

CONSULTATION AND COORDINATION

5.0 CONSULTATION AND COORDINATION

An environmental assessment (EA) must be prepared when a federal government agency considers approving an action within its jurisdiction that may impact the human environment. An EA aids federal officials in making decisions by presenting information on the physical, biological, and social environment of a proposed project and its alternatives. The first step in preparing an EA is to determine the scope of the project, the range of action alternatives, and the impacts to be included in the document.

The Council on Environmental Quality (CEQ) regulations (40 CFR, Parts 1500-1508) require an early scoping process to determine the issues related to the proposed action and alternatives that the EA should address. The purpose of the scoping process is to identify important issues, concerns, and potential impacts that require analysis in the EA and to eliminate insignificant issues and alternatives from detailed analysis.

The Bird to Opal Natural Gas Pipeline and Compressor Station project EA was prepared by a third party contractor working under the direction of and in cooperation with the lead agency for the project, which is the Bureau of Land Management (BLM), Kemmerer Field Office, Kemmerer, Wyoming.

5.1 PUBLIC PARTICIPATION

A Scoping Notice was prepared and submitted to the public by the BLM on March 3, 2003 requesting input into the proposed pipeline project. Scoping documents were sent out to the public listed on the BLM mailing list, as well as organizations, groups, and individuals requesting a copy of the scoping document.

There were nine written responses received during the scoping period in response to this project. These written responses did not state a position in regard to the project but provided suggested mitigation if the project were implemented. The issues and concerns identified by the public during the scoping period are summarized in Chapter 1.

During preparation of the EA, the BLM and the consultant interdisciplinary team (IDT) have communicated with, and received or solicited input from various federal, State, county, and local agencies, elected representatives, environmental and citizens groups, industries, and individuals potentially concerned with issues regarding the proposed drilling action. The contacts made are summarized in the following sections.

The following organizations/individuals either provided comment or were provided the opportunity to comment during the scoping period.

CHAPTER 5: CONSULTATION AND COORDINATION

FEDERAL AGENCIES

Federal Energy Regulatory Commission
Department Of Energy
U.S. Environmental Protection Agency, Region 8
U.S. Senator Michael B. Enzi
USDA Forest Service
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
U.S. Representative Barbara Cubin
U.S. Senator Craig Thomas
USDA National Park Service

STATE AGENCIES

Governor, Jim Geringer
State Representatives
Wyoming Department of Transportation
Wyoming Oil and Gas Conservation Commission
Wyoming Department of Environmental Quality
State Senators
Wyoming Office of Federal Land Policy
Wyoming Game and Fish Department
Wyoming State Historic Preservation Office

COUNTY GOVERNMENT

Lincoln County Commissioners
Sweetwater County Commissioners
Sublette County Commissioners

MUNICIPALITIES

Mayor of Big Piney
Mayor of Fort Bridger
Mayor of Green River
Mayor of Lyman
Mayor of Mountain View
Mayor of Diamondville
Mayor of Granger
Mayor of LaBarge
Mayor of Marbleton
Mayor of Opal

NATIVE AMERICAN TRIBES

Arapaho Wind River Traditional Elders
Eastern Shoshone National
Northern Ute Cultural Committee
Shoshone Tribal Cultural Center
Shoshone-Bannock Tribal Office
Arapahoe Business Council
Northern Arapaho Business
Shoshone Tribal Business Council
Shoshone-Arapaho
Shoshone-Bannock Tribes

LOCAL MEDIA

A press release was sent to local media.

LANDOWNERS, INDUSTRY REPRESENTATIVES, AND GRAZING PERMITTEES

This scoping notice has been sent to known property owners, industry representatives, and grazing permittees that would be affected by this project.

OTHER AGENCIES AND INDIVIDUALS

National Wildlife Federation
Oregon/California Trails Association
People for the USA
People for Wyoming
Petroleum Association of Wyoming
Sierra Club/Wyoming Chapter
Sierra Club - Regional Director
Sweetwater Wildlife Association
Southwest Wyoming Mule Deer Foundation
The Wilderness Society
The Nature Conservancy
Trout Unlimited
Western Mule Deer Foundation
Wyoming Outdoor Council
Wyoming Public Lands Council

5.2 LIST OF PREPARERS

The following tables identify the core BLM IDT (Table 5-1) and the consultant IDT (Table 5-2) that were principally involved with preparing this EA.

Table 5-1. List of BLM Interdisciplinary Reviewers

Name	Responsibility
KEMMERER FIELD OFFICE	
Kelly Lamborn	Realty
Wally Mierzejewski	Visual Resources/Recreation
Lynn Harrell	Cultural Resources
Pat Netherly	Vegetation/Range Issues
Gary McNaughton	Paleontology/Geology
Carl Bezanson	Invasive, Non-native species
Lara Oles	Wildlife/T & E Issues
ROCK SPRINGS FIELD OFFICE	
Jennifer Bates	BLM IDT Lead, Realty
John MacDonald	Soils/Pipeline construction/reclamation
Dennis Doncaster	Hydrology/Water Quality
Terry A. Del Bene	Cultural Resources
Jay D'Ewart	Vegetation/Range Issues
John Henderson	Fisheries
Jim Dunder	Wildlife/T & E Issues

Name	Responsibility
Jim Glennon	Zone Botanist
Kevin Lloyd	Wild Horses
WYOMING STATE OFFICE	
Susan Caplan	Air Quality

Table 5-2. List of Consultant Interdisciplinary Team EA Preparers

Principal Interdisciplinary Team		
Name	**Affiliation**	**Responsibility**
Gary Holsan	Gary Holsan Environmental Planning	Interdisciplinary Team Leader, Project Manager
Susan Connell	TRC Environmental Corporation	Air Quality
Jan Yerkovich	Western Archaeological Services	Cultural Resources
Charles Bucans, P.E.	Star Valley Engineering	Project Coordinator/Editor/Writer

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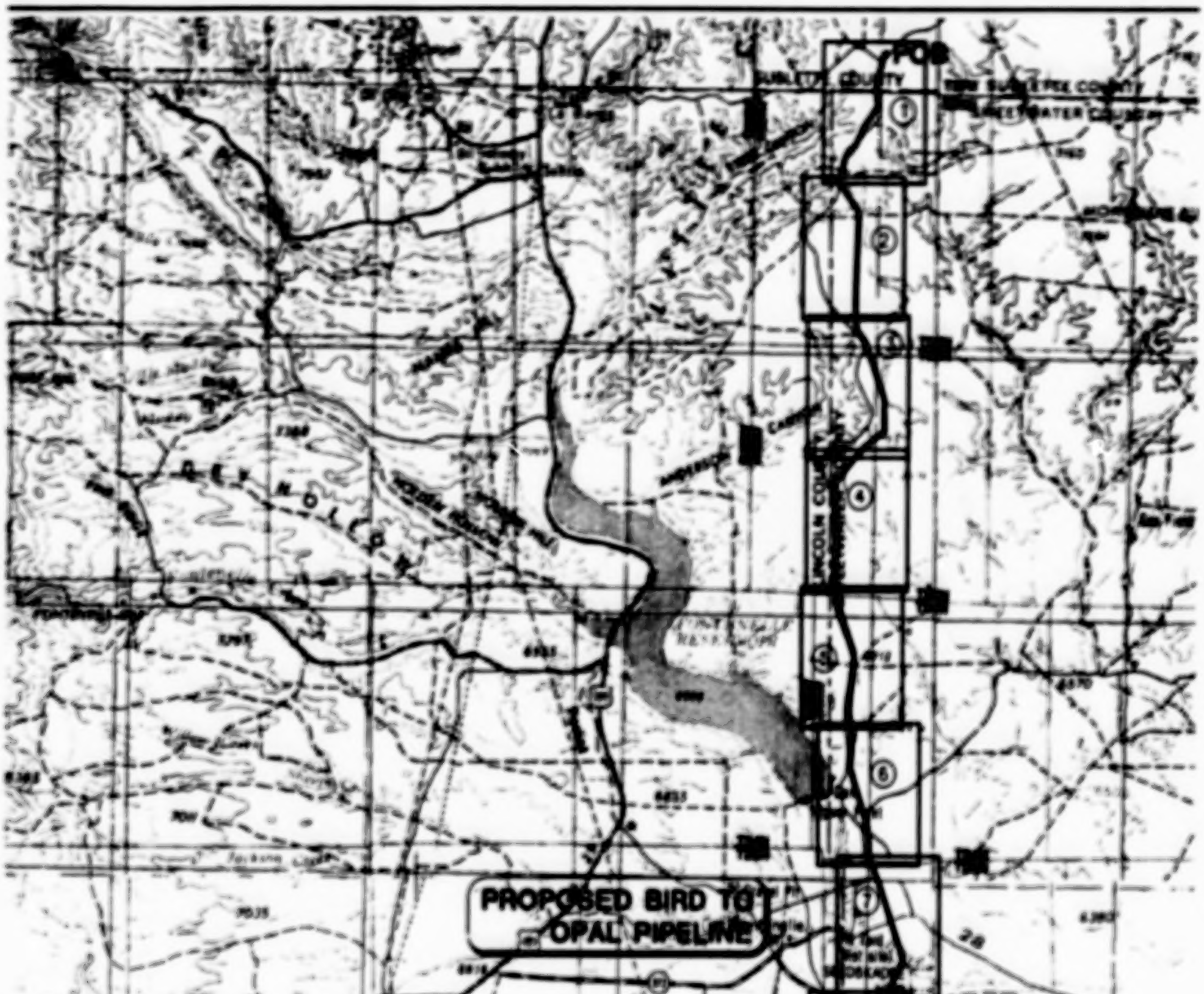
APPENDIX A



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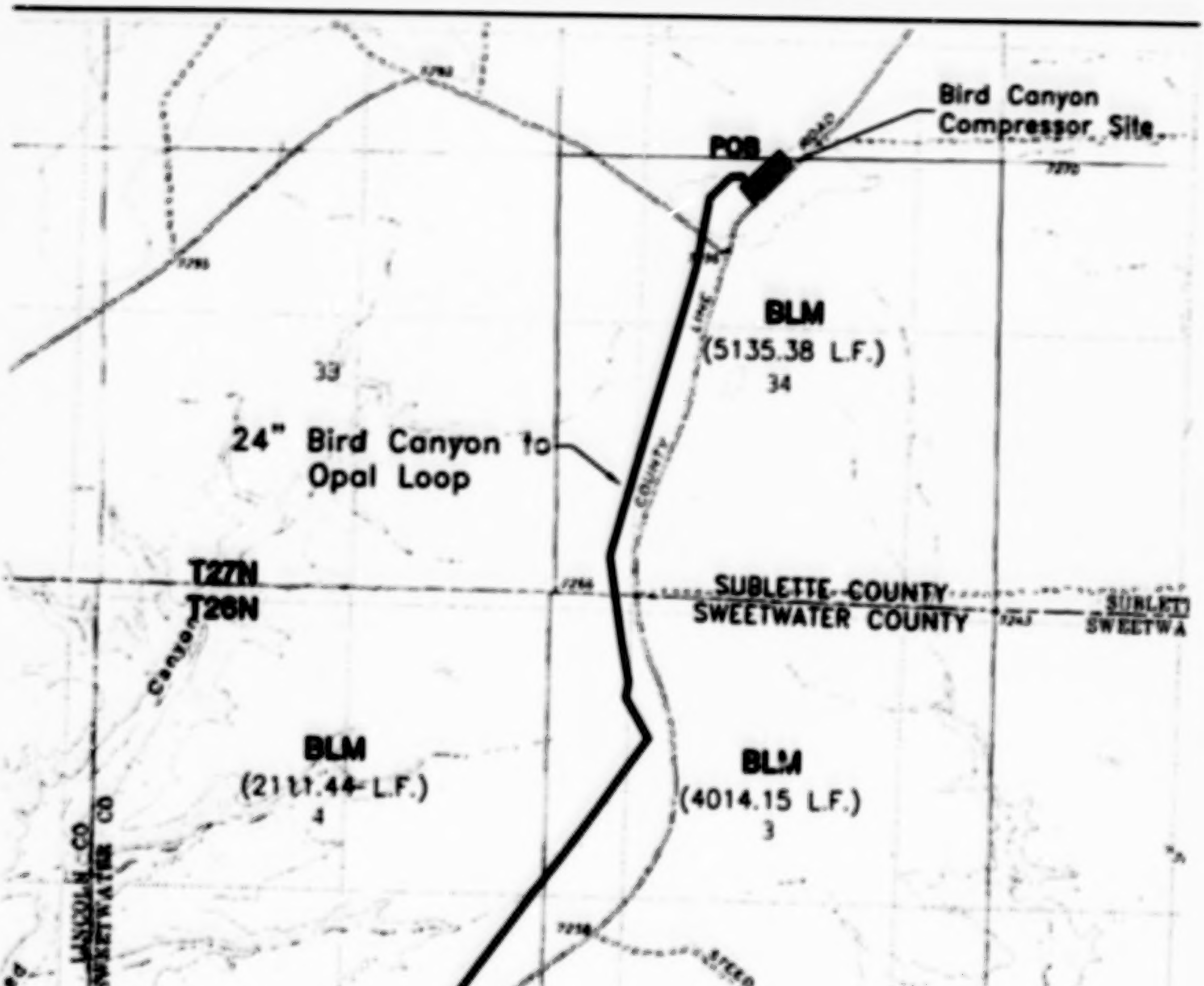

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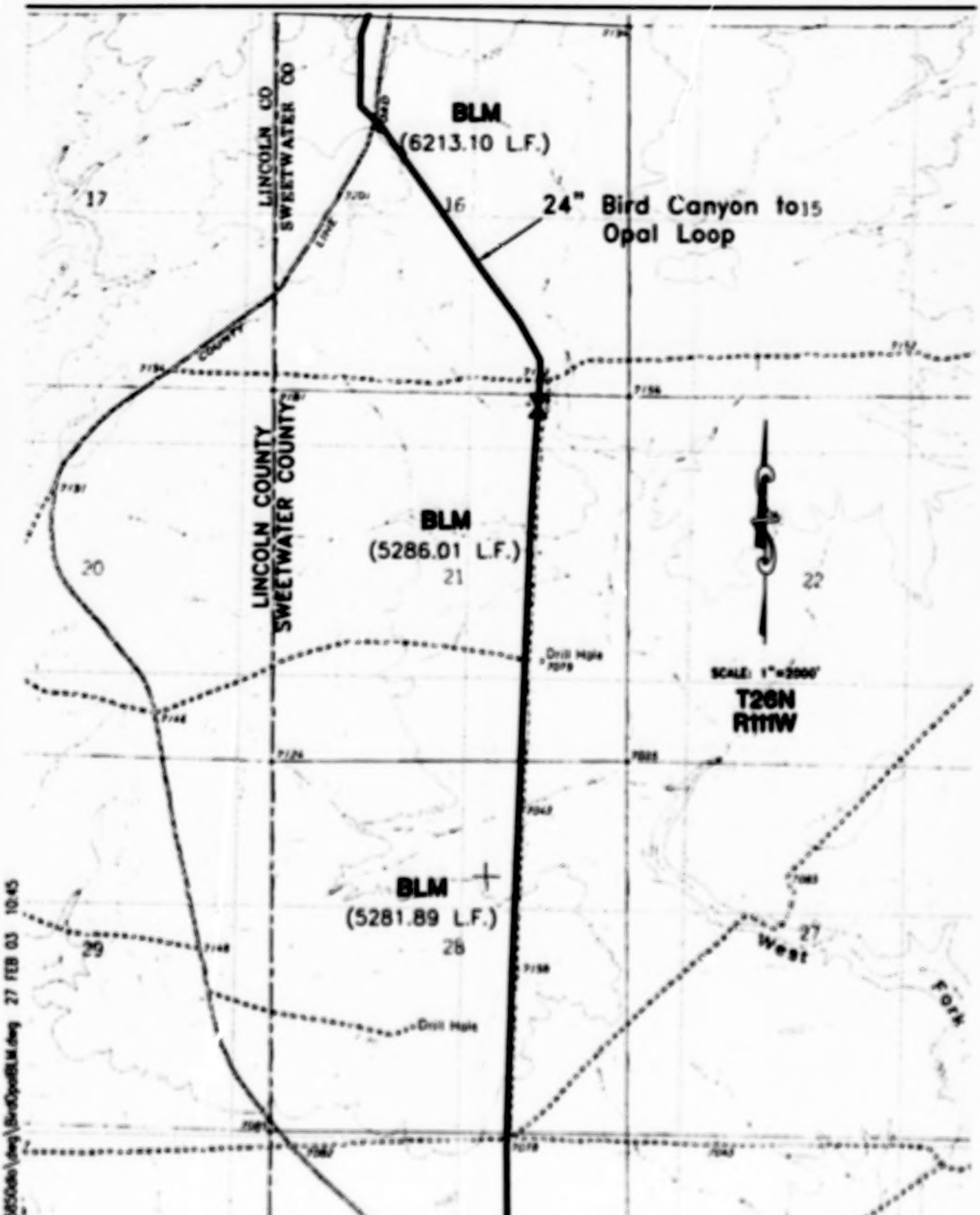

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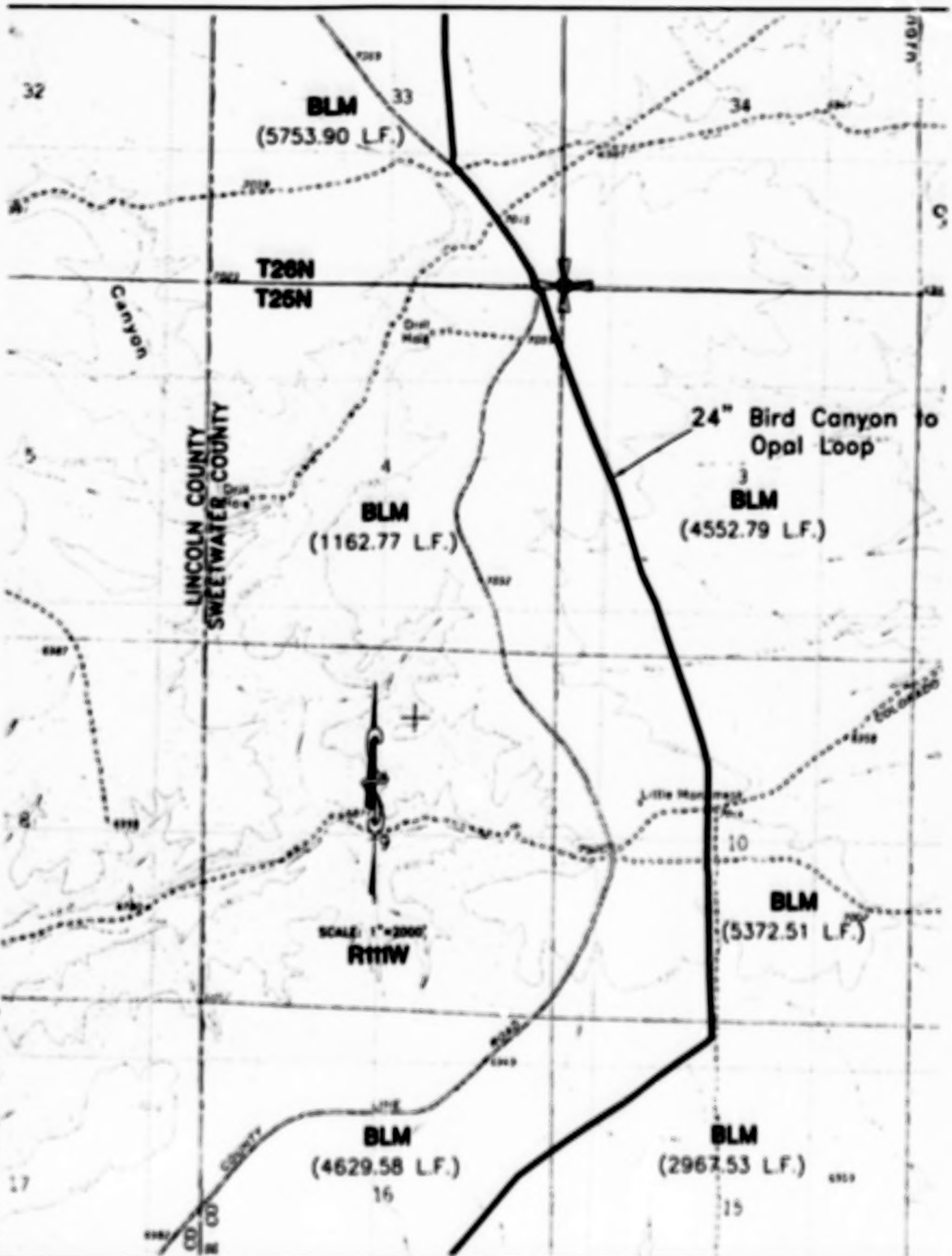

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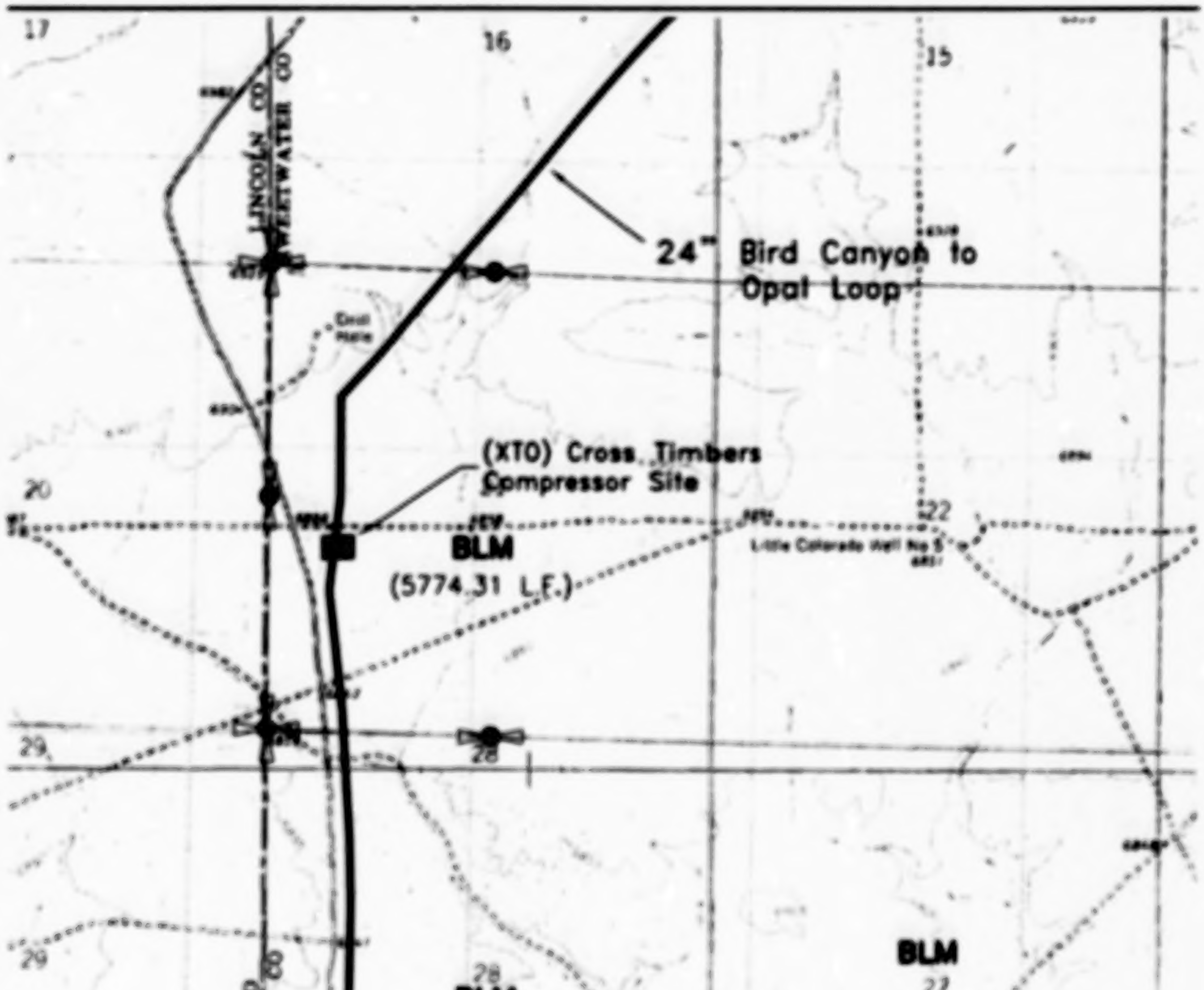

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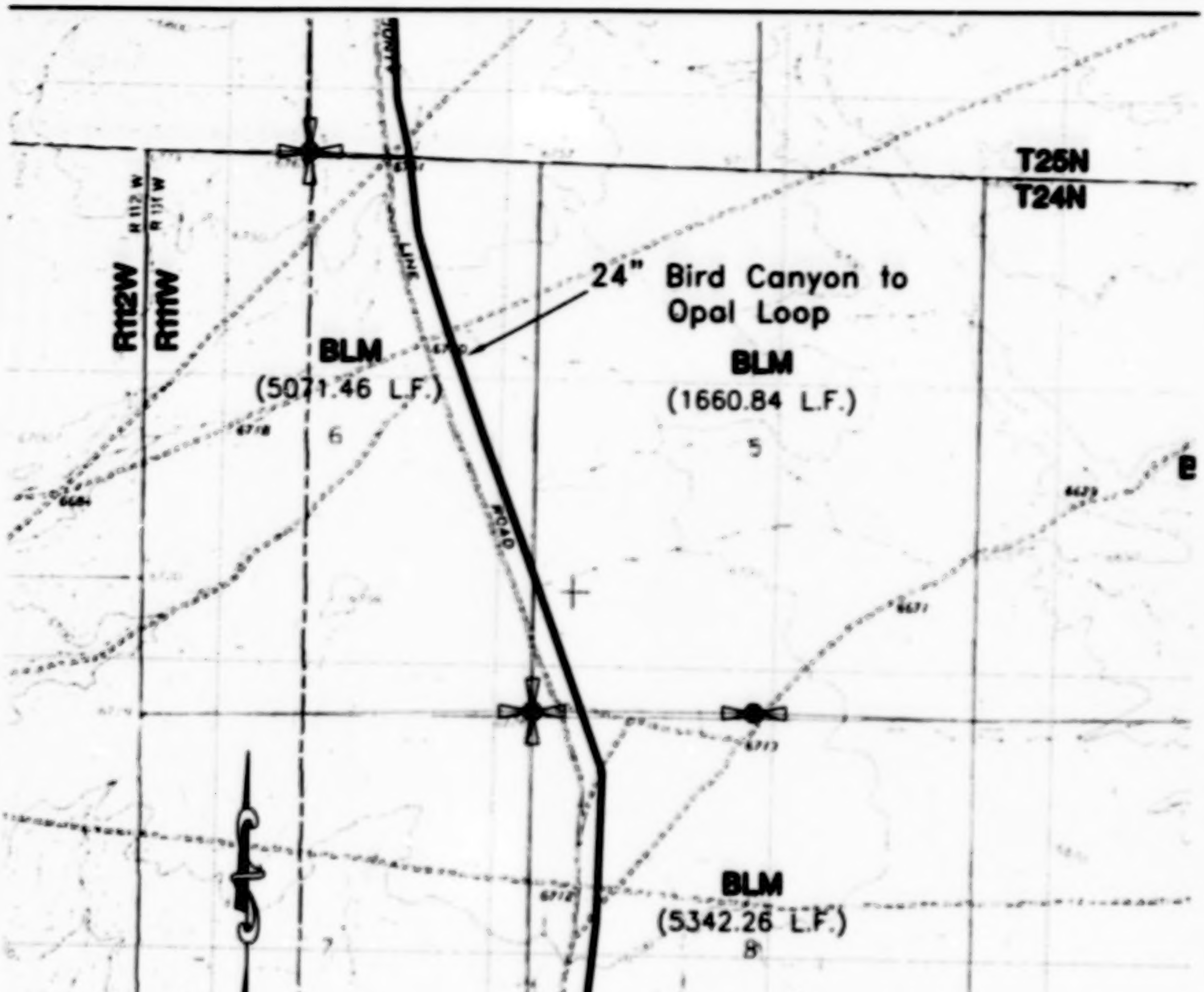

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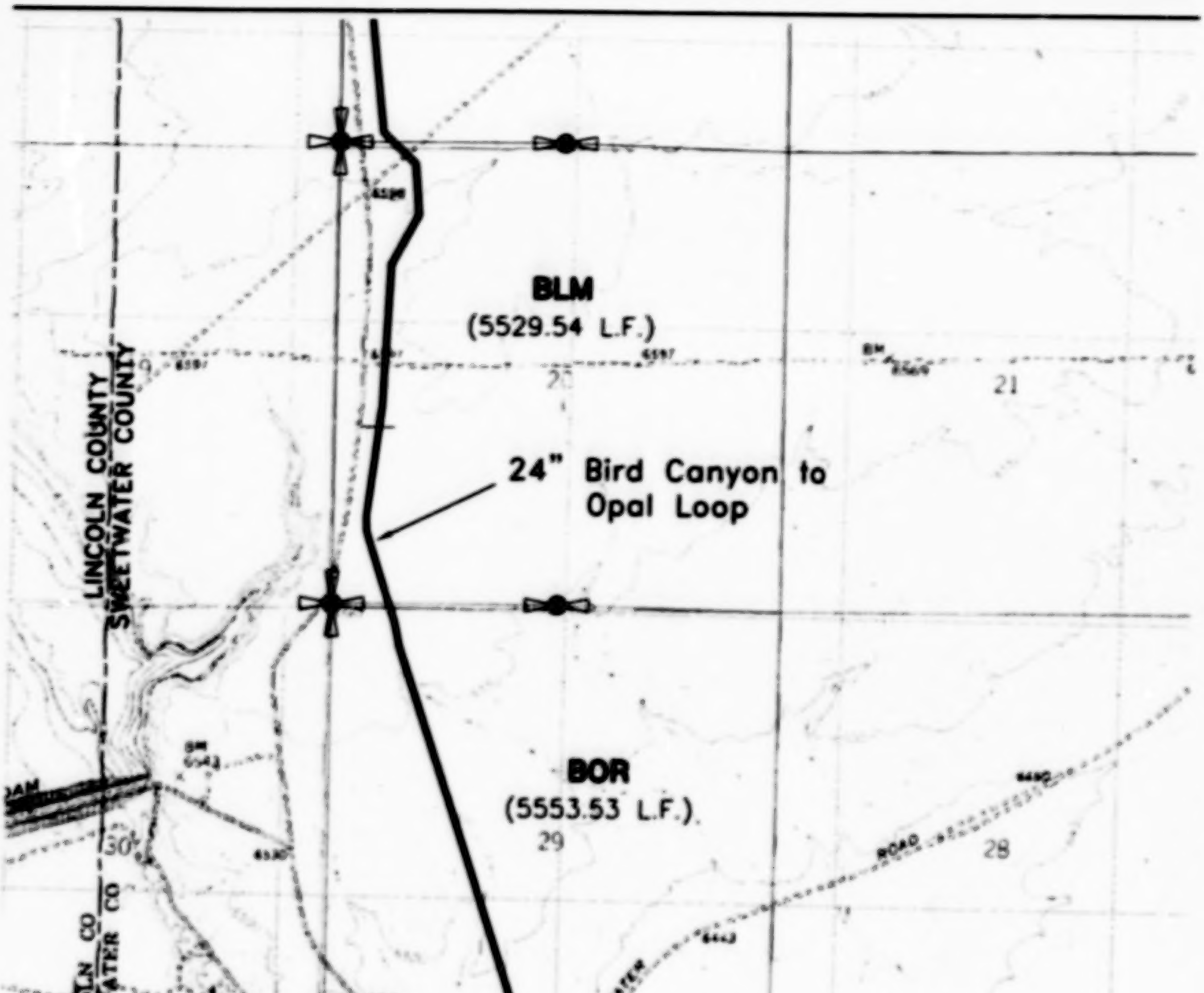

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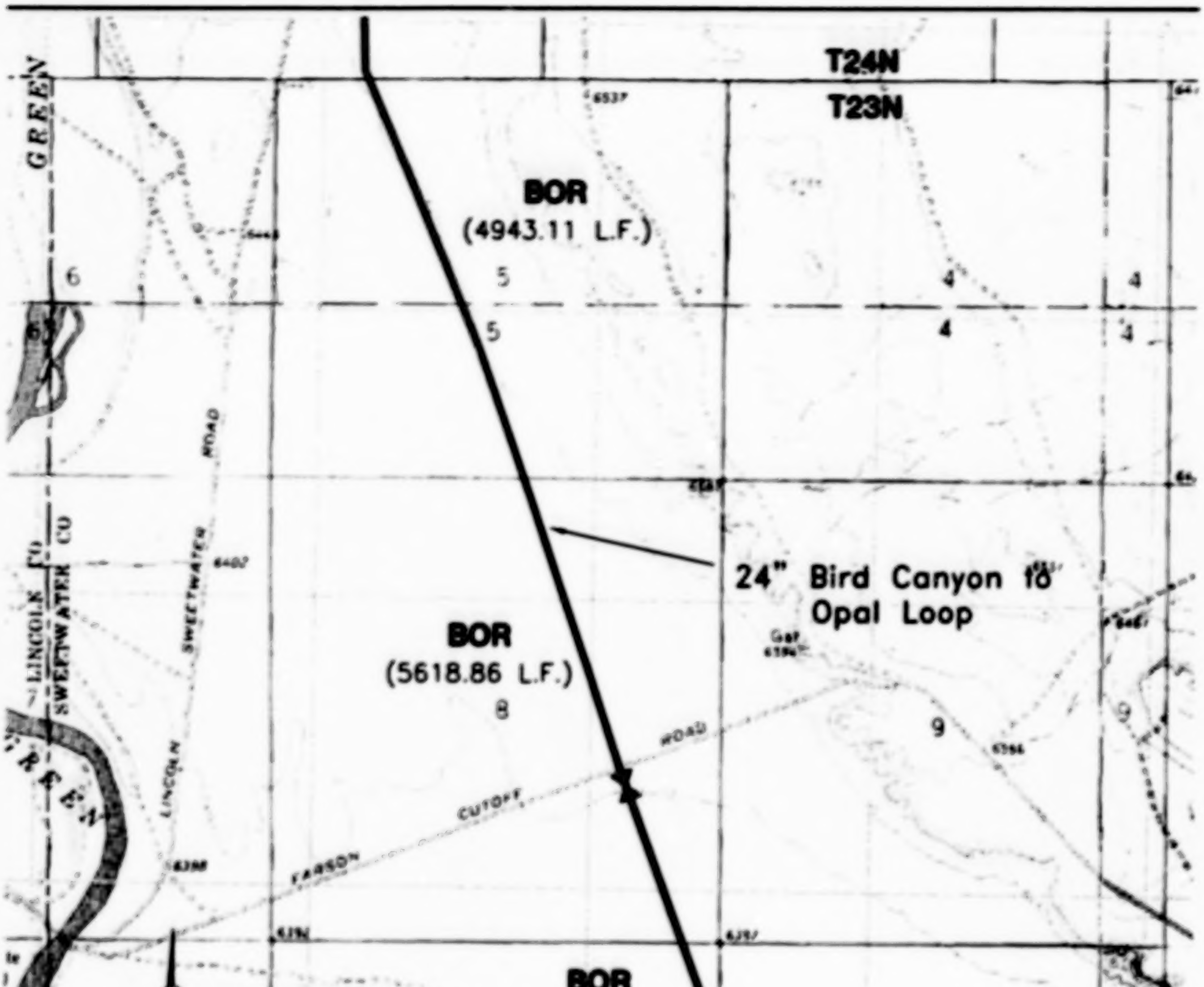

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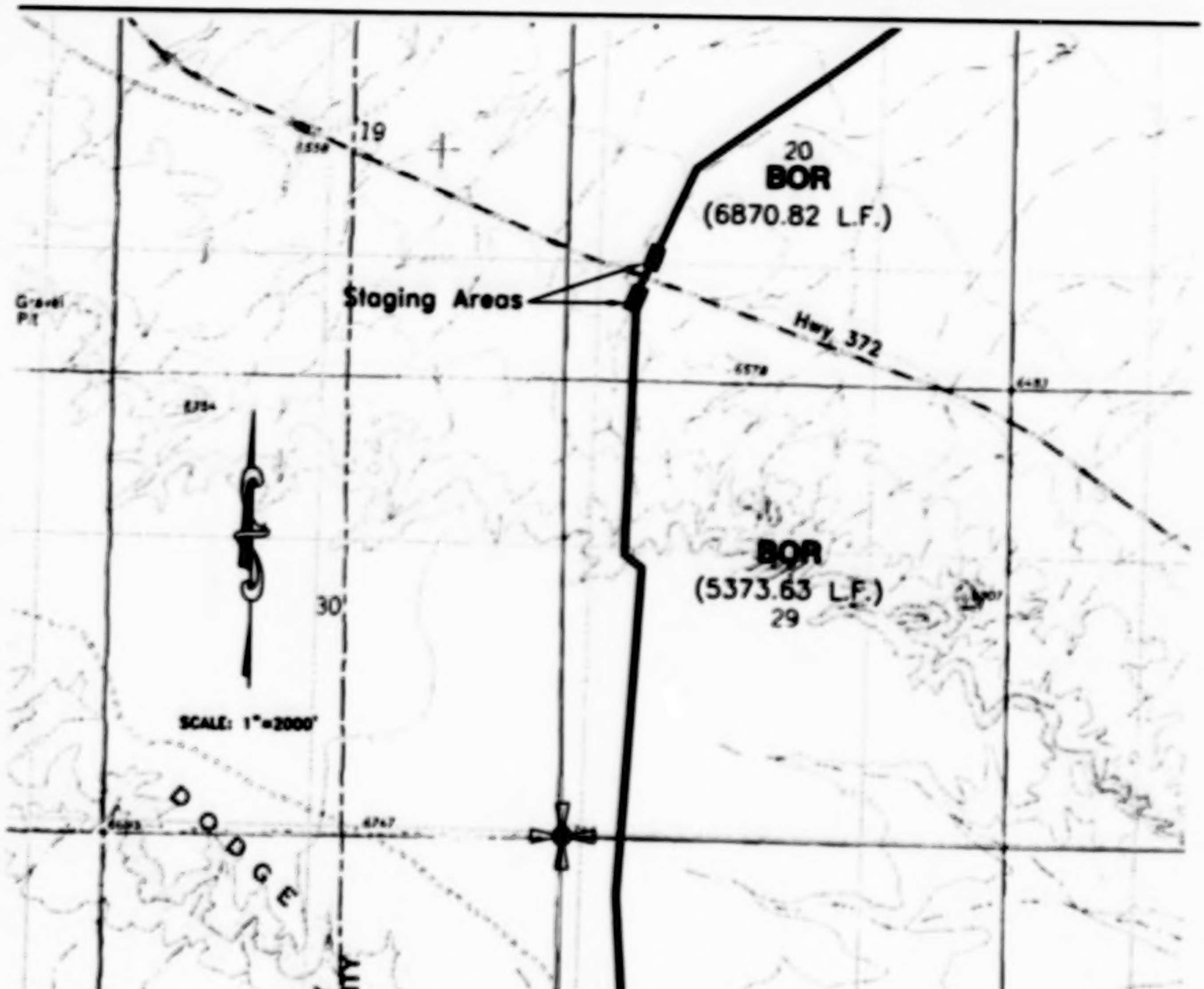

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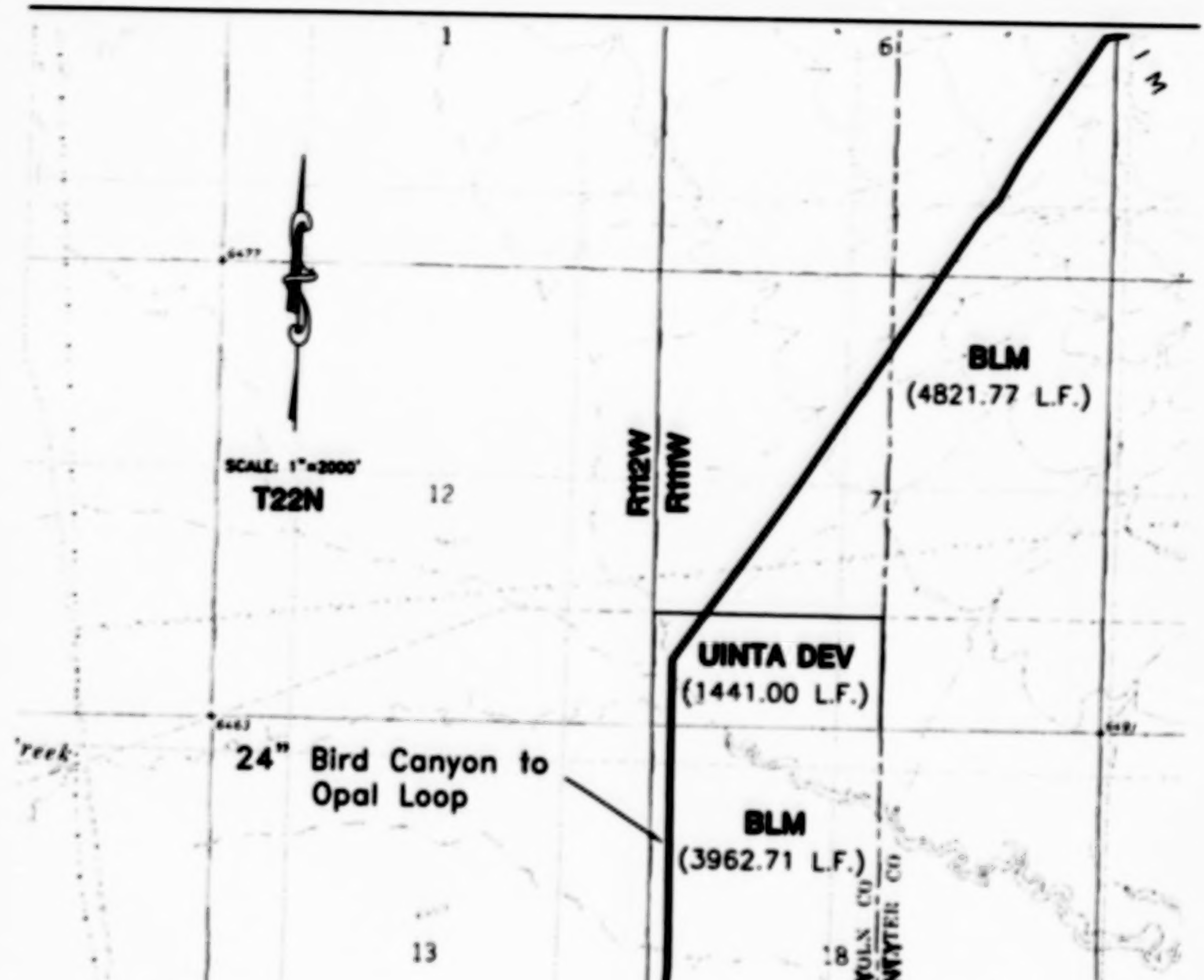

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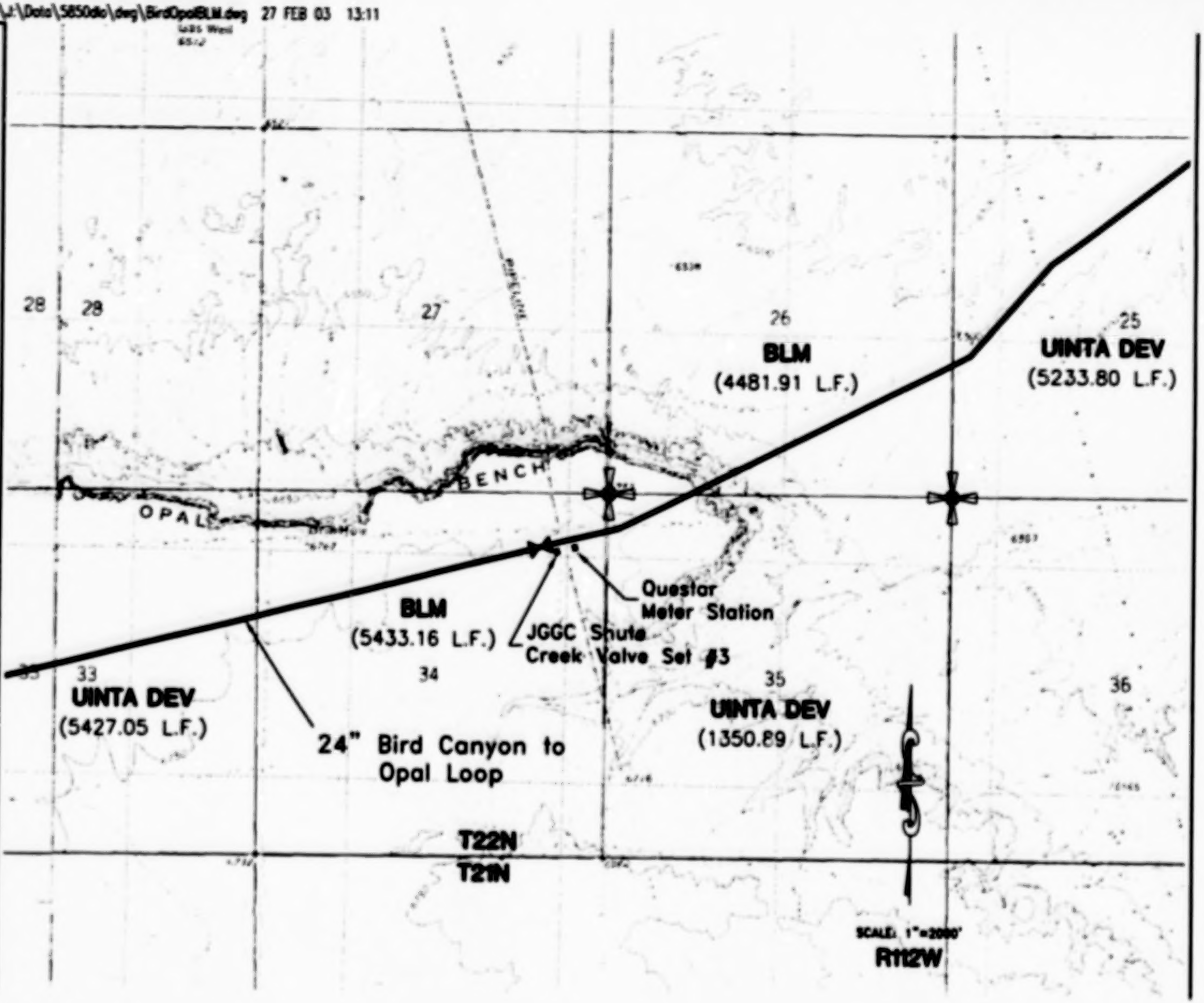

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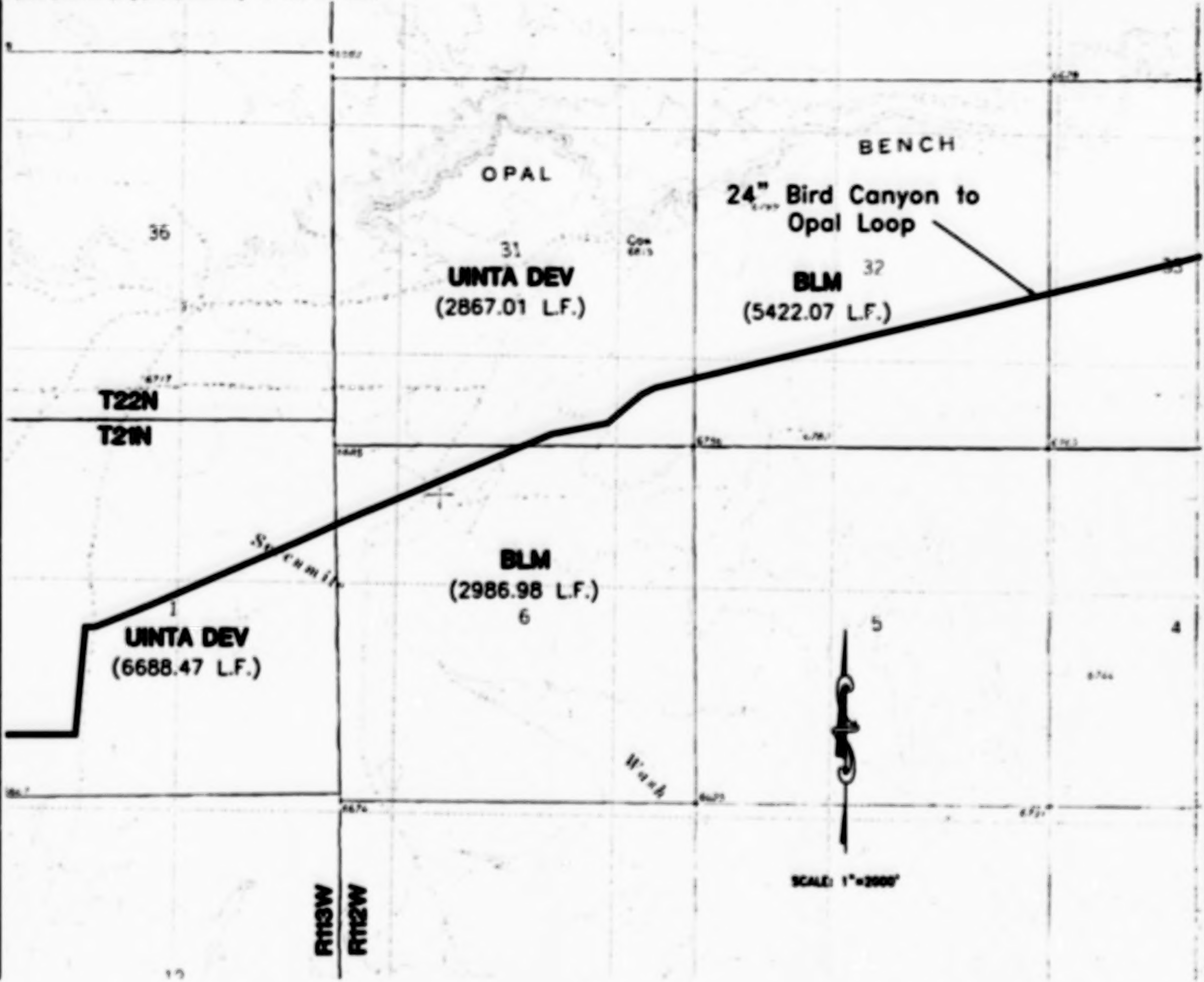

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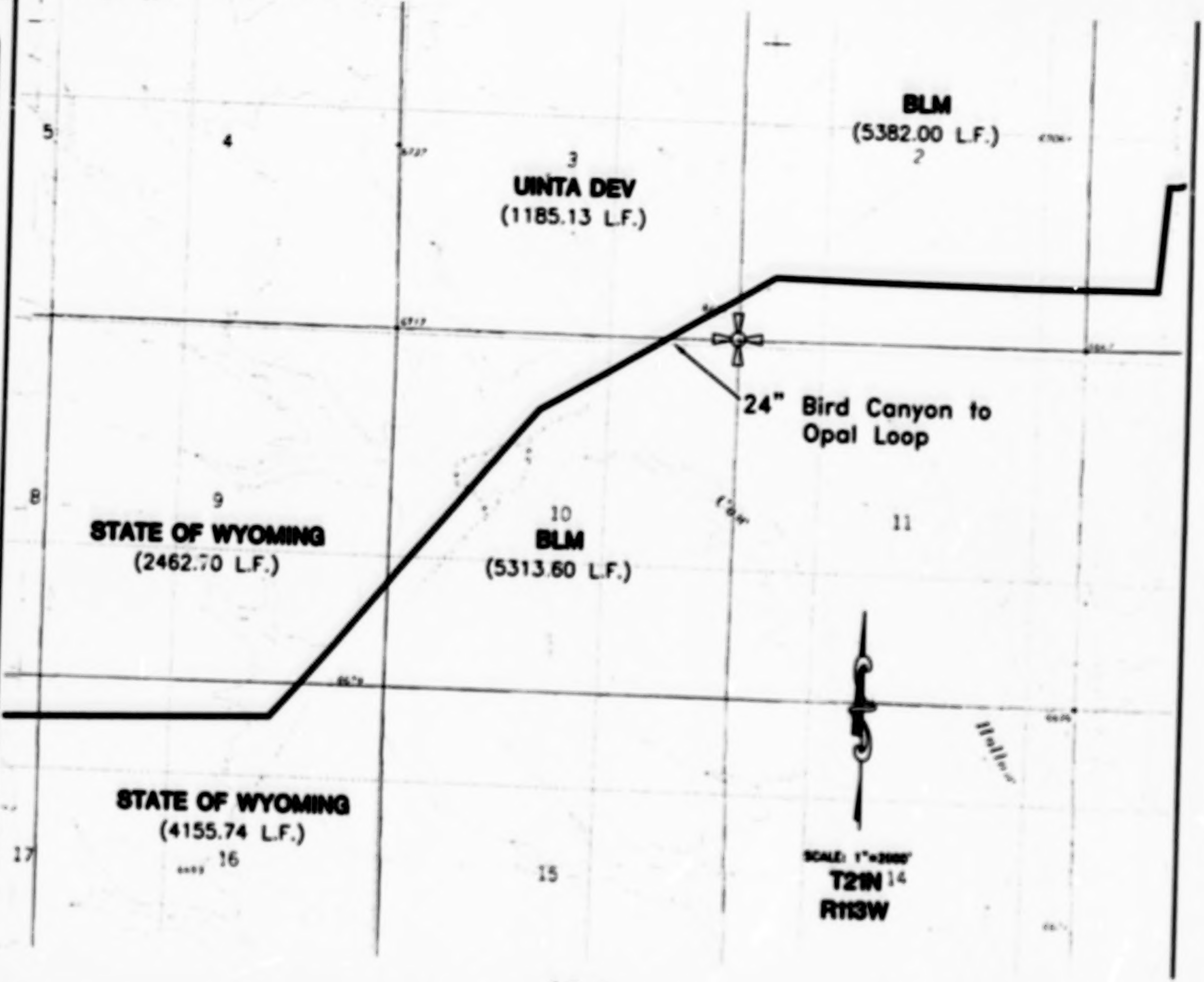

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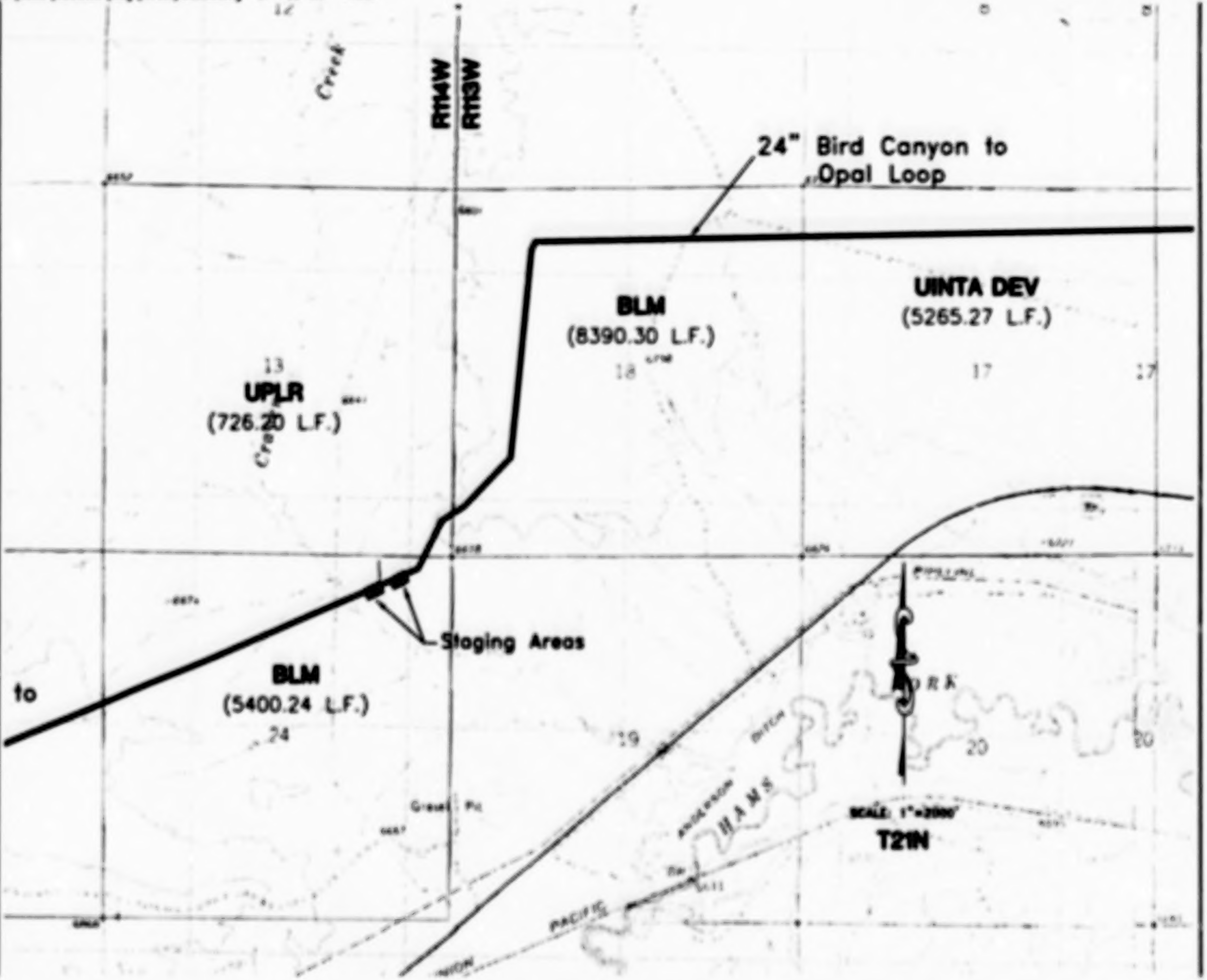

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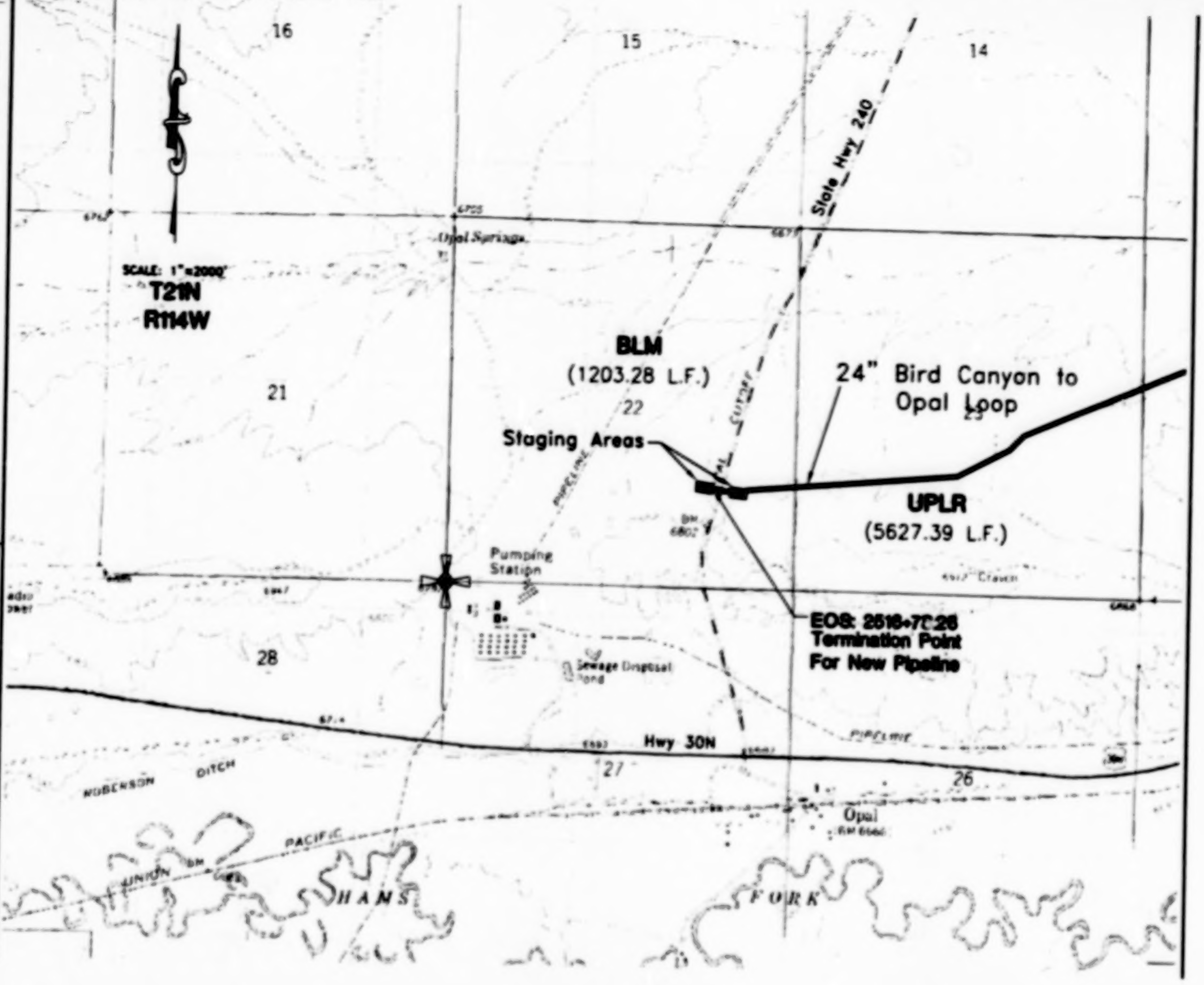

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